

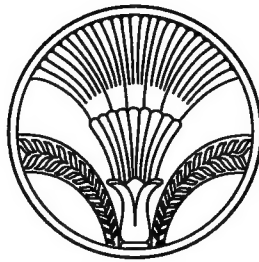
THE  
PEREGRINE FALCON  
AT THE EYRIE



FRANCIS HEATHERLEY



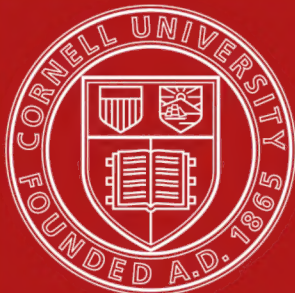
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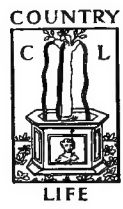
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THE PEREGRINE FALCON  
AT THE EYRIE



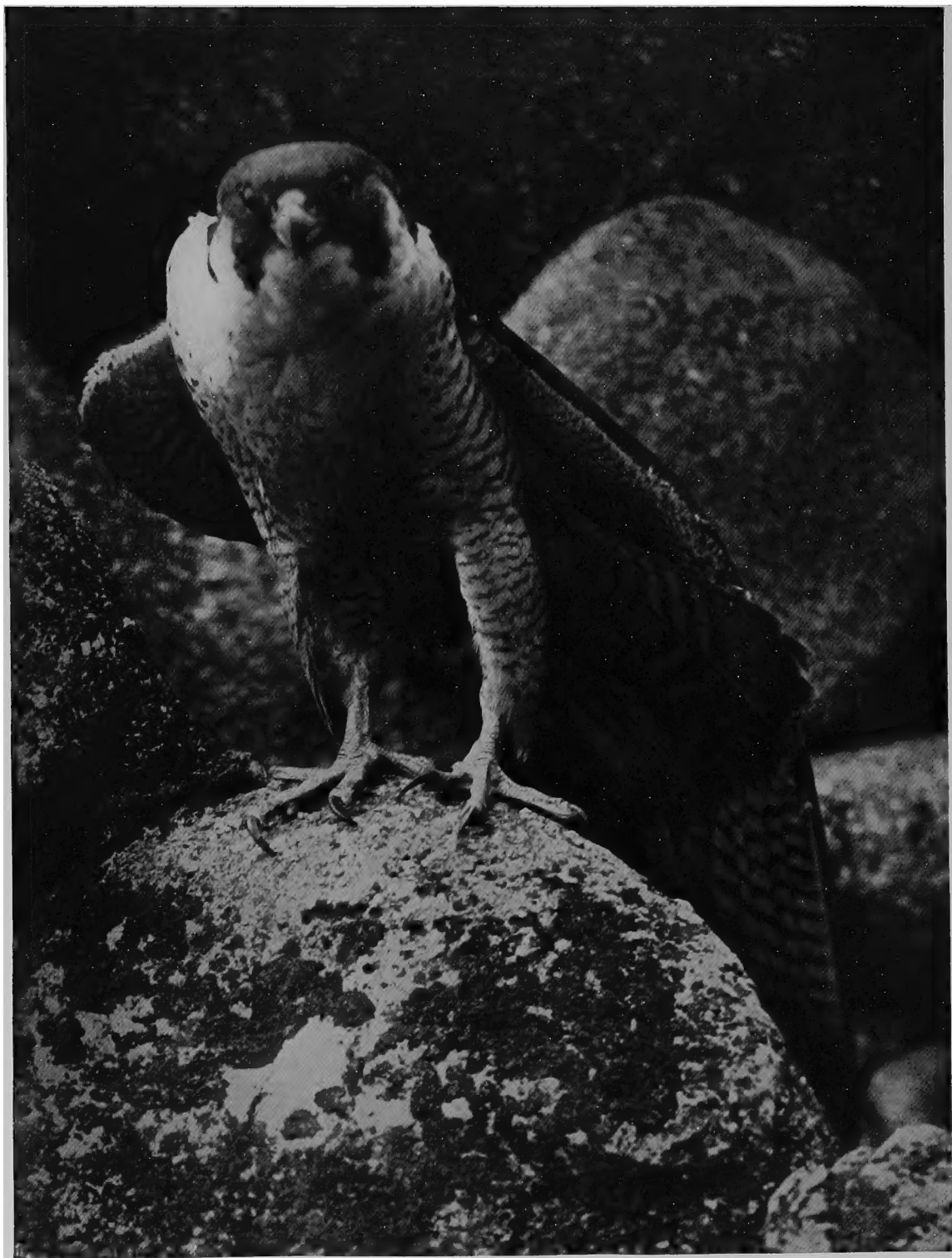
“IT IS THE LAW OF GOOD ECONOMY TO MAKE THE BEST OF EVERYTHING.  
HOW MUCH MORE TO MAKE THE BEST OF EVERY CREATURE?”

—*The Crown of Wild Olive*

HUDSON & KEARNS,  
LIMITED, PRINTERS,  
LONDON.







THE TIERCEL STRETCHING HIMSELF.

*Sight 4, Plate speed 250, Subject number 100, Stop F16, Exposure 1-25sec.*

# The Peregrine Falcon at the Eyrie

BY

FRANCIS HEATHERLEY, F.R.C.S.

With Photographs by the Author and C. J. KING.

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1913.



THIS BOOK IS DEDICATED TO ALL EGG COL-  
LECTORS IN THE HOPE THAT SOME DAY THEY  
WILL REALISE THAT THE SHELL IS NOT  
THE MOST IMPORTANT PART OF A BIRD'S EGG.





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PHOTOGRAPHS OF THE PEREGRINE, INCLUDING THE ILLUSTRATIONS  
IN THIS VOLUME, MAY BE OBTAINED OF THE AUTOTYPE COMPANY,  
AND C. J. KING, ST. MARYS, SCILLY.





YOUNG TWENTY-NINE DAYS OLD.



## CHAPTER I.

## INTRODUCTION.

NOW that the Sea Eagle and the Osprey are extinct, mainly through the depredations of egg-collectors, and the Golden Eagle is only tolerated in parts of Scotland where sportsmen find the bird useful in thinning down the grouse and hares that interfere with deer-stalking, the Peregrine Falcon is the grandest bird of prey we have left in England. The following account is based on field notes made during three successive springs at the same eyrie, and as their full relation involves a lot of monotonous reiteration, I will try and combine the salient facts of all three years in their proper order, so as to give a connected account from the date of hatching to the time when the young leave the eyrie. The full notes will, I hope, appear later in the *Zoologist*. My friend, Smith Whiting, whose bird photographs are a joy to all his intimates, holds strong views against the publication of any accounts of rare birds, as this, in his experience, only serves to betray them to egg-collectors, who really, in their lust for the eggs of such, seem to be born stamp-collectors who have, unfortunately, missed their true vocation. I do so, however, in the hope that my narrative may raise new friends for the Peregrine Falcon and other rare birds, and so lead to their better protection. A simple method these may employ is to wet each egg and then scrawl all over it with a violet marking-ink pencil. This has no prejudicial effect on incubation, but renders the egg useless to collectors, as the violet marks are more indelible than the natural blotches.

To those who, like myself, have never seen a wild Peregrine before those figured here, I may say that it is a bird about the size of a rook or crow ; that when seen on the ground its general build and style of walk suggest a parrot ; and that, as it flies, it looks like a pigeon with rather a long tail. The female is an inch or two

taller than the male, and of more massive build, and in olden times, when falconry was the fashion and the Peregrine was the favourite of kings, she was called the Falcon and her less powerful mate the Tiercel, because he is, roughly, one-third smaller. We found this dominance of the female a marked feature of their domestic life, so that suffragettes could not choose a bird more suited to them as a totem, for the Falcon is nearly always away hunting, while the Tiercel stays at home and minds the babies.

In the feathered world there are many different races, and as occupation stamps men into different classes, so is it possible to trace their likenesses among birds. The eagle has from time immemorial been looked upon as the king of birds, and the Peregrine is of the blood royal. There has been a movement of late to dethrone the eagle and replace him by the raven, who is undoubtedly the brainiest of them all. His family are the great legal fraternity among birds; nimbleness of wit mingled with audacity characterise them all, so that the very first time that I observed the hoodie crow at home I was struck with his laughable resemblance to a barrister in wig and gown. There was the same keen eye for the shortcomings of others, and the general look of mental superiority to ordinary folk. Possibly it was his sidling jump and hoarse chuckle while punishing the careless gull by taking her unguarded egg that sounded like an ill-timed jest during the administration of justice; but anyhow, the raven tribe do not appeal to me as kings. There is a want of dignity about them which is immediately apparent when you see the wild Peregrine at close quarters. For here you have the embodiment of quiet majesty. His quiet dignity, or the haughty stare with which he surveys the world from his stronghold, or the quick scowl with which he looks at something that displeases him, may not convey the deep craft of the raven, but they indicate something nobler—absolute fearlessness, with a quiet reserve of power that enables you to realise that this is the bird whose swoop is the terror of the bird-world; the bird that shoots down like a bolt from the blue, kills in mid-air with one blow from its talons and, binding to a bird as heavy as itself, is well on its way home to its eyrie and its whimpering young before the shower of scattered feathers has had time to reach the

sea. If, after this, readers complain that the Peregrines as figured disappoint them in not looking sufficiently fierce, I can only plead in extenuation that these photographs, being taken in the eyrie, are really nursery pictures, and that I can imagine even Lord Kitchener might lose his sternness under such circumstances. Although in my belief the Tiercel is fiercer and bolder than the Falcon, yet in the relaxation of the eyrie I have seen him, when wailing to the Falcon to bring him food for the young, assume a whimsically childlike and plaintive expression that might have evoked sympathy from a dove. Those who remain unsatisfied—and I hope there will be many—have only to spend a little time and trouble in making a hiding-shed and finding an eyrie, and then they will see something far better—the birds themselves.

Before coming to the results, a brief record of the three years' operations may not be out of place. In 1910 I worked from one of my late friend, Hugh Earl's tents, a self-supporting gipsy tent in which the arching canes are fixed above into a pair of ridge boards, and below into a wooden frame, so that when erected and covered with its cover of Willesden canvas, it can be easily carried about, like a huge bandbox, and placed on any flat surface. On first examining the eyrie, the difficulty was where to place it; there seemed only two sites, and both of them bad. One was just in front of the eyrie, where, among the almost perpendicular rocks about twenty feet below the top of the precipice, there was a flat, earthy space ten feet long by five wide. This was at once rejected as being much too close to the birds and because it was four feet lower than the eyrie. The alternative site was a flat rock amid the jumble that formed the edge of the precipice; but although flat it was on an incline, and though giving an excellent view into the eyrie below, it was nearly thirty feet away. However, it was a case of Hobson's choice, so the tent, having been painted to match its surroundings, was left there for a few days to accustom the birds, while a varied assortment of rocks, placed inside, prevented it from being blown away. Then I spent six most uncomfortable hours in it. Though it looked fairly right from the outside, once inside it was like lying on the side of a roof among a lot of loose rocks that threatened an avalanche with every movement. On being released I found that

some knife-edged rocks alongside on the edge of the precipice might be bridged with planks and so make a horizontal platform for the tent. This being done, I next spent great part of a sunny day watching the flies buzzing about an empty eyrie, the young being asleep behind the rocks. I came to the conclusion that probably most of the feeding was done early in the morning and late in the day, and that if I wanted to see anything I must sleep in the tent. My friends demurred on account of the risk of the tent being blown bodily away with me, should a gale spring up in the night. But after our boatman had lashed it to his heart's content, with a few additional pounds of new rope, to the adjacent rocks, I was allowed to have my own way and found, as I expected, that at sunset life in the eyrie began, and was carried on next day as if no one were present. But after two more watches I found, on developing my negatives, that the game was not worth the candle, as I only got the birds the size of a bluebottle. So at our next visit we came provided with trestles four feet high, and with some trepidation we erected the tent face to face with the eyrie. I intended leaving it unoccupied for two days, but bad weather lengthened this to a week. By this time the young were ready to leave the eyrie, and I had the disappointment of seeing nothing, but of hearing the old birds lure the young away to be fed somewhere out of sight.

The year 1911 opened with good prospects. By the middle of April there were four eggs in the eyrie, and a new eyrie had been found on an adjacent island, also with four eggs in it, which we proposed to devote to the kinematograph. But the egg-collector had picked up our trail and we had, unfortunately, omitted to pencil the eggs; so when it was too late we found out that by bribing a boatman, he had cleared out the new eyrie and had taken half the eggs out of the old one. Why he left two can only be surmised; but possibly the boatman dreaded what might happen if we arrived and found ourselves without occupation, and the collector probably sold his six eggs as two complete clutches. It may be gathered that there is not much love lost between bird-photographers and egg-collectors. On the principle of what is fair in love and war, collectors pass themselves off as photographers

and so obtain entrance to bird sanctuaries whose gates are afterwards found closed by the bird-photographer. On one occasion an individual at Ravenglass aroused the suspicions of the watcher owing to the number of nests opposite which he erected his camera, which, when forcibly examined, proved to be full of little drawers lined with cotton-wool, an accessory not listed by the leading camera-makers. That we sometimes manage to turn the tables is, I think, shown by the following incident: A friend of mine was watching some Peregrines in the wilds of Northumberland. One day the landlord of the little inn at which he stayed told him that two gentlemen had arrived from London who were egg-collectors. At my friend's request no mention was made to them of his real occupation, but they were casually told that he knew more about the birds of the district than anyone else. The collectors soon introduced themselves and gladly accepted his guidance. Arrived at the eyrie, he advised them to wait a few days, as this Falcon always laid four eggs, but would probably desert if they took the one egg they found lying there. During the interval he turned egg-collector, visiting many of the outlying farms, and then secretly resorted to the kitchen, where he boiled a number of small hens' eggs of the desired shape in a saucepan, with sliced onions. As a result, he picked out four most beautifully blotched and browned eggs, and at dawn substituted them for the Peregrines' eggs. He then at breakfast told the collectors of his early stroll, and opined they need wait no longer. They started off immediately in order to be able to catch the midday mail, and having seen them safely off to London on their return, he replaced the real eggs in the eyrie and had the satisfaction of learning later that the Peregrines brought off four young that year. He has often wondered what the collectors said when they tried to blow their eggs.

I had noticed in 1910 that the Peregrines did not like the flapping of the canvas of the tent, so during the winter I evolved a portable hiding-shed in sections, made out of three-ply, and had the good fortune to interest a patient of mine, Mr. J. H. Bateman, who was making a protracted convalescence, and he made me the shed to my design. But nevertheless, 1911 turned out badly. I had intended starting a week earlier, but I was unable to leave, and

eventually, owing to rough weather making it unsafe to land the shed, it was a week later than the previous year when we put it up. The shed itself was quite satisfactory, but a new focal-plane shutter, in which I had invested four pounds, was apparently unfinished when finally delivered a day or two before I started, and ruined most of my exposures. The weather only permitted three watches at the eyrie, and, to crown all, the young left it a week sooner, as, owing to there only being two of them, they were more abundantly fed and developed more rapidly, a fact I had previously noted with ravens.

In 1912 the shed was erected within two days of hatching, and as I had invited several bird-watchers to join me, we were enabled, by a system of daily reliefs, to have the birds under constant observation for thirteen days and nights. Of the notes thus acquired I am including those of my friend, H. B. Booth, both because they give a fair idea of life in the shed and because I think they will make it obvious how valuable such a contrivance is for those who, untrammelled by the cares of photography, wish to use it for simply observational purposes. Its cost, however—the material alone came to over three pounds—will, no doubt, prevent its adoption generally by ornithologists, who seem to prefer the inexpensive blowpipe and its immediate and tangible results.



## CHAPTER II.

## LIFE IN THE EYRIE.

AS on April 7th there was one egg in the eyrie and on the 11th there were four, it may be assumed that an egg is laid daily till the clutch is complete. On May 14th the eggs were photographed, and showed no signs of chipping. Rough weather prevented our landing till May 18th, when we found four chicks. This gives roughly an incubation period of five weeks, which is in accordance with our notes of the two previous years. I may remark that I find works on ornithology singularly reticent over the period of incubation of many birds. The Falcon flew off as we approached the eyrie, and immediately started calling the alarm as she circled overhead. Her harsh cry seemed to me to be more like "aitch, aitch, aitch" than the "kek, kek, kek" of the books. I never could tell them apart when flying, but when together it is plain that the Tiercel is smaller and his alarm note different and rather higher in pitch. Their flight consisted of a series of rather laboured beats followed by glides on outspread wings. The young formed a round heap like a pancake raised in the middle. Before we disturbed them there was only one head visible. They lay with their heads towards the middle and their eyes closed. When separated they opened their weak-looking eyes languidly; but one of them snapped and bit at our fingers. Already it was possible to distinguish two males by their smaller size; these were in the centre of the heap, and underneath. It would be interesting to know if, in a clutch of four eggs, there is any difference in size. From the early appearance of this sexual difference in the chicks I should think it quite possible. The down on the chicks was thin, so that they looked a pinkish white. The general appearance of the young gives a curious suggestion of extreme old age. We found a dried turtle-dove's head in the eyrie and a corncrake's as well as the remains

of a small bird whose few remaining features suggested a ringed plover but that the legs were black. We erected the shed on its trestles, lashing it to the rocks above by ropes fastened to a ring-bolt at each corner of the shed, keeping the young well covered up during our proceedings, which were long, toilsome and so thirst-producing that we collared most of the boatman's private stock of beer. On May 19th it was too rough to land, but on the 20th I moved in with my furniture—a mattress, two pillows and a Jaeger three-blanket sleeping bag, as well as a Thermos of hot tea for the early morning, and plenty of provisions wrapped up in butter-paper and packed in a tin box, as I believe in doing things comfortably. I was rather doubtful about the wisdom of erecting the shed so soon after hatching, but trusted to the parents being accustomed to interference. There was, however, no sign of the old birds on landing. Halfway up there was still no sign, and six greater black-backs, sailing overhead, looked ominous; but just as we were getting to the eyrie the Falcon shot out, screaming. This year the inside of the shed had been painted black in aid of concealment, and at King's suggestion we made use of ladies' veils to fill up the gaps in the look-out slit, and found it better than the fishing-net we had been using. My friends left me at 12.40 p.m., and fifteen minutes later the Falcon alighted silently on rock B, and after peering round anxiously, dropped out of sight behind it, from which she emerged a little later, and walked in a stooping attitude to the young and covered them. In settling down she tucked them in under her with her beak. As I was particularly anxious not to scare her, I waited twenty minutes before I made an exposure. She seemed quite at her ease, brooding the young and at the same time turning her head sharply in all directions as she watched what was happening to seawards. When I let off the focal-plane shutter she ran off, crouching, and flew away. She came back in five minutes, and after giving her another fifteen to settle down again, I ventured another exposure. This time she only turned her head sharply at the report, but afterwards the clicking, as I cautiously wound the shutter, made her more and more uneasy, until at last she got up and flew away. However, I managed to get four of her before 3 p.m.



KEY TO THE ROCKS.

*Tiercel with food for young three weeks old. A and B, arriat rocks; C, departure and preening rock; B, eyrie.*

On one occasion on her return she alighted on rock C, which was only five feet from the camera. On another occasion she presented a fine sight. Pitching on the top of the rock behind the eyrie, she clambered down its almost vertical face with both wings extended. She was, however, very nervous, and on one occasion departed, owing to a single slight cough on my part. About fifteen minutes after her final departure the Tiercel arrived with a mangled thrush. The young immediately came to life and squatted in a ring as he held the quarry under his talons and tore bits of it out with his beak; they whimpered, and each convulsively raised its open beak in the hope of being chosen for the red morsel he held lightly in the tip of his beak. Generally the pieces, which he evenly distributed, were small; but I was surprised to see what enormous mouthfuls of flesh and feathers they at times managed, with a little struggling, to swallow. He occasionally looked in my direction while I rapidly exposed three plates on the scene, and did not seem at all scared by the unavoidable noises I made. However, he must have been so, as he left after the third exposure. Nevertheless, he returned in a few minutes and continued the meal, while I made five more exposures. He gave several startling "yapps" towards the end of the meal, which I knew of old meant that the young were getting slow in taking their bits; one young female struggled some time with a leg she tried to swallow. She tried hard, but the claws remained an inch outside her beak. The Tiercel rapidly swallowed the remnants and proceeded to brood the young. As he sat quite still I put the focal-plane shutter out of action, and, taking the back of the camera out, fixed the silent studio shutter behind the lens and took two of him with it. The tube leaked; but I had previously found out that a full squeeze of the ball gave with the leak exactly a half-second exposure. Although he frequently turned his head, each movement was generally followed by a second or more, during which he was quite still, so I fired directly after he had moved his head. These extremely rapid head-movements of the Peregrine do not look so; but I had previously found to my cost that if they coincide with the exposure, not even 1-100sec. will save the image from distortion. My subsequent experience made me sorry that I had not used this

shutter on the Falcon. Shortly after my last exposure the light grew very bad and heavy showers fell. About 6.30 p.m. he began whimpering and looking up skywards. Again, shortly before 7 p.m., when the clouds broke and the setting sun began to stream in through the front of the shed, he looked up and yelped impatiently at the Falcon soaring overhead. He waited a few minutes and then got off the young carefully and flew away. Then I did a very foolish thing. As the sun was coming in through a large gap



THE YOUNG BIRDS WHEN TWO DAYS OLD.

*Light 3, Plate speed 250, Subject number 100, Stop F11, Exposure 1-50sec.*

to the left, which only had a layer of net over it, and so was brilliantly illuminating the inside of the shed, I thoughtlessly took advantage of the Tiercel's absence to pin a piece of mackintosh over the gap, only to find the Falcon standing on B, which was six feet off. She was staring at me in alarm, and although I immediately "froze" and half-closed my eyes, the mischief was done, and after jerking her head in my direction three or four times, she flew off, screaming the alarm. There was a good deal of calling

between them after this, and the young began to whimper, apparently from cold. Finally, at 7.30 p.m., I was disappointed when the Tiercel came and brooded them for the night.

Next morning I heard the Tiercel call soon after 3 a.m., and raising my head from the pillows, saw him looking skywards as he sat brooding the young. About 4 a.m. he was calling again. This time he flew off, but returned in a few minutes to brood. The same occurred at 5 a.m., and hearing the young whimpering after his return, I looked out and found he was feeding them off a thrush. The second meal started at 5.50 a.m. and lasted till 6.5; apparently the quarry was a blackbird. In the course of this meal they swallowed practically all the feathers except the flight and tail feathers. He gave one female the rump, and when he found her in difficulties, he took it back and pulled the tail-feathers out for her. When he got to the intestines he snipped off pieces three or four inches long, and occasionally there was a tug-of-war if the piece was not swallowed in time to prevent another youngster seizing the free end. When, towards the end of the meal, the young became inattentive, he did a good deal of yapping, as usual. During this meal, at 6 a.m., one of the young females had a leg given to her, and during the rest of the meal she made convulsive gulps in her efforts to swallow it, but the claws and about an inch of the leg remained outside. The Tiercel again swallowed the remnants, including the other leg, and then covered the young, without paying any attention to the young female with the protruding claw. He dozed at intervals, and in closing his eyes I noticed that the lower lid, yellow in colour, rose slowly and covered the eye. He never dozed for more than a few seconds at a time, even when not disturbed by the youngsters moving under him. This often happened, the chief offender being the female with the claws. She on several occasions wriggled her head out from under his breast. The last time I saw her do this was at 6.35 a.m., when the claws were still protruding. At 7 a.m. I tested the light at the back door, and, finding it sufficiently good, took a series of him with the studio shutter. Whenever he dozed for more than fifteen seconds, his head began to droop on his chest. Several times he sat there with his seaward-eye open and his landward-eye closed ;

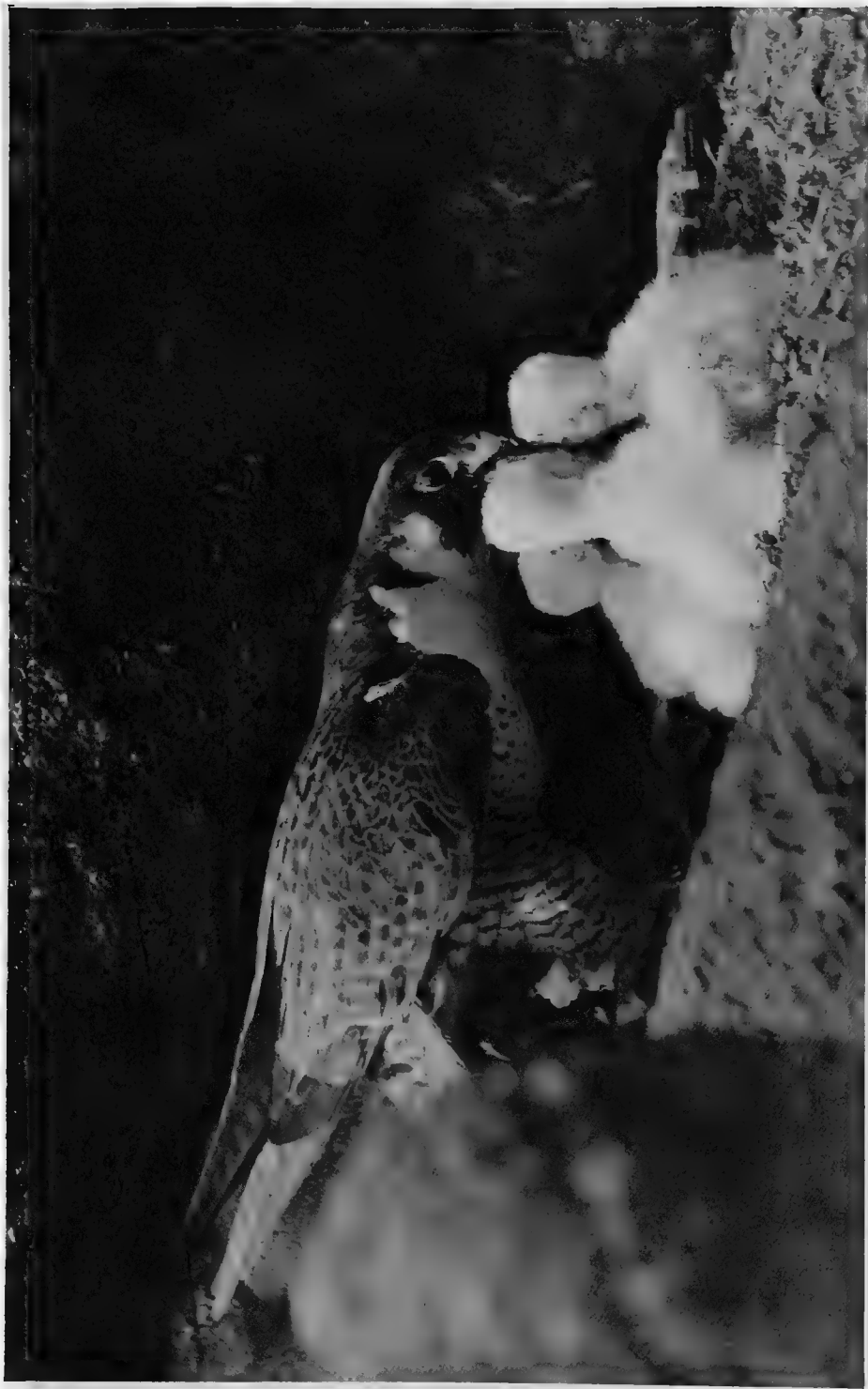




THE FALCON BROODING.  
*Light 2. Plate speed 250, Subject number 100, Stop F11, Exposure 1-75sec.*

but in the plate that ought to show this he apparently closed his eye just as I exposed. After dozing, he partly preened himself while brooding the young. He sneezed four or five times and also yawned. Shortly after 8 a.m. he yelped and looked up as if watching the Falcon overhead, then stepped off the young and, jumping on to C, flew off. There then followed a good deal of yelping out of sight, and the young began to stir and whimper, the nearest female gaping; I saw the claws for the last time; this time inside her mouth.

At 8.8 a.m. the Tiercel brought a small bird, unidentified, and fed them. The young female with the claws stood in the back row most of the time and did not seem hungry. I saw her get a lump once, but could not be sure of more. If any little bits dropped during a meal, the Tiercel carefully picked them up and presented them again. The males generally got the smallest bits, and one of them was nearly always in front of the others. I saw one young male this time get four helpings in succession. One of the young females got a leg given to her and the Tiercel swallowed the other. This meal lasted from 8.8 to 8.20 a.m., after which he brooded them and it began to drizzle. At 8.40 a.m. I heard the Tiercel yapping, and, looking out, found him engaged in feeding. As what he was using looked like scraps, and I had not heard him or the Falcon give the food cry, I concluded it was the remainder of the 8.8 a.m. meal. He swallowed the last pieces himself, including a leg. As this would make the quarry three-legged, I expect the young female must have disgorged hers while she was being brooded. This feed only lasted two or three minutes. I had a bad bout of coughing just about this time owing to some tobacco smoke going the wrong way; but although he evidently heard me, cocking his head on one side and looking puzzled, he was not in any way upset, for which I was sincerely grateful. At 9 a.m. it stopped raining, but there was no sun. At 9.46 he got off the young, jumped on to C and flew off. I heard him wailing in the distance; it sounds exactly like the hungry whimper of the full-fledged young—a long-drawn “way-ee,” and is the food cry. Three minutes later I heard his wings close as he dropped into the eyrie with a plucked and partly-skinned puffin. I identified it by



TIERCEL FEEDING YOUNG FOUR DAYS OLD.  
*Light 3, Plate speed 250, Subject number 100, Stop F11, Exposure 1-100sec.*

a leg, but saw no head. While tearing it up with his beak I could hear its bones crack and snap. Occasionally, when the lump that came away was unusually large, he swallowed it himself, as also happened when it consisted of a large piece of skin or one of the long bones. The puffin afforded more than the young required, and the Tiercel ate steadily himself for the last two or three minutes and, leaving the carcase unfinished, settled down to brood the young, the meal having lasted sixteen minutes. He had a job to spread himself over them, and as he sat, one or more showed in front. As at 10.30 a.m. the light had considerably improved, I took one of him at 1-25sec., there being too much movement to make the studio shutter safe, as when he was not moving his head, one of the young would be sure to be wriggling. With the fifteen-inch lens, at a distance of eight feet his image measured two inches on the screen. At 11 a.m. he looked skywards, hopped on to C and flew round, giving the food cry, but flew down again in a few minutes without any. About 11.30 he came off the young and, jumping on to C, began to preen himself. After a little consideration I risked scaring him, so loosened the camera screw and slowly turned the camera on to him. I found, however, that the shelf was tilted too far backward for this position, so that only the lower half of his body was on the screen. Then I found the floor of the shed littered with spare laths and other things requiring noiseless removal before the shelf-frame could swing forward into a horizontal position. When all was free I found that the bar that fixed the frame in the rack had swelled, and it required some time to get it out. Then, when I had noiselessly swung the shelf forward and fixed it, I found, on focusing, that there was a green blur all over him, which, on removing the focussing screen, resolved itself into a piece of weed dangling in front of the lens. Again I had to risk his displeasure. Putting on my gloves, I cautiously protruded the scissors and snipped the weed off. He merely stopped preening and watched the proceedings with a quizzical expression. After that it was all plain sailing, and feeling that the chance of photographing the Tiercel at a distance of five feet was not an every-day occurrence, I rapidly exposed my last seven plates on him, only waiting once or twice to make sure of the focus. As he did not seem to mind, I wasted no time in being



THE TIERCEL STRETCHING HIMSELF.

noiseless. As I had now used twenty-four plates, I was sorry I had not brought more, but never having been able to use more than six previously, I thought I had brought ample. The Tiercel finished by stretching his wings, first his left, after which he turned to look at the young, then the right, and then he hopped down and brooded them till 12.15 p.m., when he flew off, calling for food. At 12.30 I heard his wings flap and saw him alight on B. He was wet and dragged, as if after a bath. Then he jumped down and brooded the young. About 12.45 he jumped on to A, calling the food cry, and flew off. From 1 p.m. to 1.30 the Falcon seemed to be trying to make up her mind to return to the eyrie. As I had no plates, I sat and watched, and so there were no signs of life in the shed to interfere with the proceedings. She several times flew into the eyrie and then jumped on to either B or A, scowling and thrusting her head forward in sudden jerks, peered in all directions and then flew off, crying the alarm. The Tiercel was all the time calling to her and apparently flying from rock to rock. It was neither the alarm nor the food cry, and as I suppose that as these two easily-learned cries do not comprise the whole of their language, it was presumably a conversation. Once when she was standing in the eyrie, with her back to the youngsters, and peering anxiously in all directions, he came down with a thump on to the roof of the shed and talked to her as if assuring her of her perfect safety, while I kept very still in case any unfortunate movement might alarm my gallant ally. After a few minutes I could breathe more freely, as he jumped down on to C and continued his speech.

Then she broke her gloomy silence, and seemed to be giving him a bit of her mind. She was evidently in a towering rage, and both together were making the most extraordinary sounds. She hissed and clucked and he yelped and yapped. At one time she stood there like a fury, spitting and snarling at him, her scowling head lowered, and with all her neck feathers bristling up she took half a step forward as if for two pins she would kill him where he stood. Then both flew off. The Tiercel returned in about ten minutes, and stood by the young in the eyrie, but paid no attention to them. He looked annoyed and disappointed. If some may



CAUGHT WHILE COMPLETING HIS TOILET.

think all this rather far-fetched I recommend them to watch such wild birds at close quarters. I do not mean the broken-spirited wretches one sees in zoos. Then he raised his wings and hopped on to C, and preened himself for twenty-two minutes in strong sunshine. I evidently missed seeing a lot while I was getting the shelf straight, but, fortunately, King on a subsequent occasion filled in the gaps. The Tiercel shook and fluffed himself out and buried his head among his breast feathers, occasionally cocking his head round, and with a child-like expression, partly due to his half-closed eyes, he called to the Falcon for food. Then he sneezed two or three times, scratched his nose with one claw, and lifted each talon in turn with outspread toes, peeling bits off them with his beak. Then he brought both feet down and raised his wings high above his head, looking at me with a "what-do-you-think-of-this?" expression. Then for a long time he stood on one foot, generally the right, with the other nearly hidden among his breast feathers, and dozed. Then as the young began to whimper he jumped down and brooded them with his back turned to me.

About 2.20 p.m. the Falcon gave the alarm, and the Tiercel flew off, but returned in a few minutes, pitching on A, and walking down it to the eyrie, where he resumed brooding. At 3.5 p.m. the Falcon called the alarm, and the Tiercel flew off; the alarm soon ceased, and the Falcon came down on to A and stood there a short time. She is not nearly so yellow about the breast as he is. His is quite creamy, whereas hers is an ashen white. The Tiercel kept calling to her, but she soon flew away, and he returned to resume his brooding till 3.30, when she again called the alarm, and he, flying off, joined her in calling it, and a few minutes later the arrival of my friends brought my watch to an end.

Jasper Atkinson took the next watch, from May 21st to May 22nd, and his observations are pretty well a repetition of what I have described. C. J. King took the watch from May 22nd to May 23rd, and he records that the Tiercel has difficulty in covering young when brooding, owing to their rapid growth. At a meal at 4.50 p.m., when the Tiercel brought a blackbird, he gave one youngster a whole leg with the foot and claws, and when it could not swallow the foot he snipped the protruding part off with his





WITH A "WHAT-DO-YOU-THINK-OF-THIS?"<sub>1</sub> EXPRESSION.

beak. The same kind of thing happened later on with a wing ; in this case he removed the feathered end with one stroke of his talons. King was interested to see what enormous lumps the youngsters managed to swallow, and how when one had too large a piece another tried to take it from him, when a tussle ensued.

The next day, at a meal one young bird in trying to swallow a leg could not get the foot down, and bit it off just above the claws, showing the power of the beak even at this early age.

Nothing particularly fresh occurred during the short watch kept by F. H. Edmondson, from 12.55 to 5.25 p.m. on May 23rd, except that after the Falcon had started the alarm after the relief party had landed, the Tiercel showed his daring by bringing a thrush, with which he fed the young hurriedly until within a few moments of the party's arrival.

### CHAPTER III.

#### LIFE IN THE OBSERVATION SHED.

BY sharing our opportunities at the eyrie with friends, King and I in return received much valuable help. Not the least of these advantages was the ability, by means of a constant succession of lodgers, of keeping the birds under constant observation for thirteen days in succession. Although H. B. Booth apparently thought it necessary to provide himself with a camera of the press-the-button variety in order to qualify for a night's lodging, he really showed us how watching ought to be done, and incidentally the want of windows at the side and back of the shed. He disapproves of my habit of using the adjective peregrine as a substantive. As he has also sinned in this respect, I did not think it tactful to allow him to revise his rough notes, which, written on the spot, give a graphic impression which could only be dimmed by polishing.

H. B. Booth's watch from 6.5 p.m., May 23rd, to 11.25 a.m., May 24th, as copied from his rough field notes.

Atkinson came up with me to "Peregrine Hotel" to relieve Edmondson, who reported that the Tiercel had been feeding strongly, having brought several birds, including a thrush, during the last two hours. It is strange that with this pair, and possibly with all Peregrines for anything I know, the male is the more courageous, and feeds the young in spite of this wooden structure being erected on the cliff-side, not three yards from the eyrie. It is exactly the opposite with the sparrow hawk as far as division of labour is concerned. At 6.5 p.m. my two friends bade me "Good night," and went down to the boat to return home, and I am left to soliloquise and take in my bearings. "Peregrine Hotel," as we are all instructed to call it, is best described as a large box or glorified packing case about seven feet long by four feet wide and four feet deep, resting insecurely on trestles, but well lashed to the

rocks above by ropes. Inside it one can comfortably lie down or kneel, but one cannot, of course, stand up. There is a comfortable mattress, pillows and a good Jaeger sleeping bag. There are hooks on the walls, on one of which I see I am expected to hang my watch, and all sorts of notices pinned up, one of which is a complete list of meals the young Peregrines have had since May 20th. There is also a diagram of the eyrie by J. A., with the rocks lettered for convenience in identifying positions taken up by the adult birds. To get into "Peregrine Hotel" it was necessary to crawl through the small door with my slippers on; I left my boots outside on the cliff under the hotel. It is quite understood by those who use the shed that once inside one must not use the door of retreat until relieved, or the Falcons would know that someone had been left inside, and he would thereby incur the wrath of Dr. Heatherley, our leader, who would probably expel the sinner from the band. It is certainly a novel dormitory, and as the Falcons do not put in an appearance it gives me time to reflect on possibilities. How if the wind gets up? as it seems to be doing. What is the choice between being blown out to sea like an aeroplane or to be rolled down the cliff to the same destination? Then I remember it is my birthday! What a jovial, sociable way of spending it! Then I think what a capital idea it is to teach people like myself, who go to bed too late and get up late, the value of early hours.

I am writing on because there is nothing else to do but to smoke and watch the four white, downy and sleepy young Falcons nestled together nearly in the centre of the eyrie. I am afraid all the fun has been on before I came on duty. It is now 7 p.m., and I have not yet seen the old birds. When we landed the pair were flying overhead, crying "Kek, kek, kek," and continued so while we were changing guard, and for ten minutes after my friends had left me, which I took to mean until the boat left. I did not hear them at all again until 6.35 p.m., and after that only occasionally, and then only one bird. Edmondson said on my arrival that the young birds were so full that if anyone touched them they would burst. Well, they settled down very comfortably altogether, with their heads towards the centre of a compact circle. From this they have never moved, excepting at first when pestered by the bluebottles

and other flies with which the eyrie is infested. But the flies have gone to bed, and the youngsters have since dozed serenely. 7.15 p.m. : One of the old birds has suddenly alighted on point B with a sharp "Hack" and an unplucked puffin in his talons. I fancy it is headless, but there is no mistaking its webbed feet. He jumps down into the eyrie with it still in his talons, and commences to tear pieces off it for the young, who quickly rise to the occasion (by the way, one is much smaller than the others), and they appear to be hungry. The old bird is apparently the Tiercel by his colour, and more particularly by his smaller size and general build. When he had fed them for nearly a quarter of an hour the Falcon appeared overhead—or, rather, I should say I heard her "Hek, hek" overhead. Shortly afterwards the Tiercel, who was now getting cross with the young for not taking his proffered snacks as quickly as he offered them, corrected them with sharp "hacks" or "yacks," and then flew away, I thought, to join the Falcon, who was still crying. He had left part of the puffin behind him, which I see is headless. At 7.45 p.m. the Tiercel returned, and gave the young a little more of the puffin. As before, on the few occasions when he tore a large piece of flesh off, or when a whole leg came away, he swallowed it himself. He then tried to brood them, but although only about a week old, they are getting too large.

All was quiet now except when an outside chick tried to get more under its father's breast. At 8.35 p.m., as I was writing, I was suddenly aroused by a low, querulous growling "Hurr-r-r-r," and, looking up, saw the Tiercel advancing with a curious parrot-like rolling gait, with neck forward and head low and neck-feathers raised—evidently very angry—emitting the "Hurring" sound all the time, as if going to meet some intruder against whom he was to defend his home and young. All this was directed against the Falcon, who came into sight walking down rock A, and dragging in one foot a plucked and skinned large bird's breast, showing only red meat. He jumped up on to the rock to her and took it, or, rather, snatched it, from her, still making this curious jarring noise, which seemed equivalent to cursing in English, as though he resented her being so late and disturbing his rest. Her size was notably greater than his. She gave a hurried glance at

the shed and then flew out to sea, as if afraid. He flew off with the food, which, I fancy, was the breast of a curlew. Five minutes later he was back in the eyrie. He only offered the young a little of it and then settled down to brood again. I am now writing almost in the dark ; it is past nine.

May 24th.—Last night I watched, and wrote till it was too dark to see. The Tiercel settled down and tried his best to cover the chicks, and for some time after one or other could be seen or heard shuffling to get under its father's breast. As it was now getting rather late, I had a little refreshment and got my bed ready. It was still possible to see the white outlines on the outer sides of his moustachial black patches, and also his white chin and breast as well, as he brooded. A little later, when the moon came out, these white patches were quite distinct, almost in the form of a white cravat, against the dark outlines of his beak and head. At 10 p.m. I turned in too. I woke up—still dark—fancy I heard the young Falcons calling—listen—and after a few minutes hear the sounds again—so sit up and can just see the dark outline of the brooding bird, with his white front and the white chicks beneath. So strike a light and find it is 2.45 a.m. Listen, and all is still for a time, then several times I hear oyster-catchers calling as they pass, and feel sure that this was the sound that roused me, as all is quiet in the eyrie and the Tiercel is still brooding. Have some breakfast, as I have had very little since my arrival, because, owing to the way the wind was rising last night, I thought there was some chance of my being weather-bound ; but the wind soon went down again. It is now 3.15, and getting light, so I doze, sitting up in order to be ready and to avoid falling fast asleep. At 4.10 a.m. the Falcon commences " Hek-hekking " loudly, and I think she is in the air. The Tiercel leaves the eyrie and joins her. I catch sight of both flying round ; but in a few minutes he returns without any food and broods again. At 4.50 a.m. the Falcon is calling the long-drawn-out, gull-like food cry, to which he immediately replies with the same cry and flies out to meet her. She transfers the quarry from her talons to his in the air. He brings it in, a song thrush, an adult, and quite intact, head and all. He feeds the young with it, occasionally swallowing a piece himself. He is very careful to

pick up any morsel that misses a youngster's beak and drops into the eyrie and carefully offers it again. He holds the quarry firmly under one foot and tears pieces off with his beak. He holds each piece loosely in the tip of his beak and, tilting his head sideways, offers it to a youngster, who takes it most gently with its own beak-points crosswise to his.

With some mouthfuls they get a good deal of feathers and bone, but with the internal parts, intestines, etc., none at all. One youngster had a job with one of the thrush's legs, the foot and claws still sticking out of its mouth for a long time ; but eventually it got it down. At 5.20 a.m. the long-drawn-out food cry of the Falcon is heard again. He immediately replies and flies out to her, and there is much noise above ; but I cannot see the birds. He brings in a small bird, a rock-pipit, intact, and I wonder if it is the same bird I have heard singing at intervals during the last hour or so. After feeding the young, in which I notice again that the only parts of the quarry which are not used up are the flight and tail-feathers, which he pulls out and drops, he jumps on to rock C and stands there for some time. Suddenly there is the long-drawn-out food cry of the Falcon again, and he immediately replies and flies out to her, when she transfers something rather small—part of a plucked bird—to his talons in mid-air. She was carrying it in her left foot, and he took it from her with his left foot. He flies down somewhere behind the hut and evidently has his breakfast ; it looks as if she plucked the food more thoroughly for him than for the young. This was at 5.45 a.m., and five minutes later he returns and broods, first picking up a few small, dry pieces and giving them to the young. It is quite evident that he is the housekeeper, and that she does the hunting and catering. He makes a model father, but never attempts to hunt quarry himself, merely watching for her return. It is now 6.45 a.m., and the Tiercel has been on the look-out for the Falcon for some time. He is evidently getting anxious for her return, as he keeps moving from one point to another, occasionally closing his eyes and dozing, but making no attempt to hunt himself. 7 a.m. : No sign of the Falcon. The Tiercel has gone to sleep on C and the young are getting restless. 7.20 a.m. : The Falcon arrives and

there ensue the usual food cries between them. I do not catch sight of her, but he brings in an adult intact female blackbird and tears it up for the young, commencing with its skull, which he breaks open and distributes. He took nearly fifteen minutes in tearing the bird up, and towards the end of the meal gave two or three of his scolding "yacks" to hurry the young. Although partly used to it, the sharpness and sudden harshness of this cry always startled me. The young, however, never appeared to be alarmed by it; it merely seemed to encourage them to take the proffered bit. The Tiercel then flew away for a minute or two, leaving the young still noisy, and on his return he brooded them. He continued brooding till 7.50 a.m., and then moved on to C. Several of the blackbird's feathers were sticking to his talons. He cleared them off with his beak, holding up one foot at a time for the purpose, and then dozed, but always with one eye ready to espy the Falcon if she should appear. He stayed on C until 8.40 a.m., often half asleep, but generally with his weather eye on the sky or his lee eye on the shed, during which time I had breakfast. He appears to know perfectly well that there is something alive inside the shed, and is but little interested what it is so long as it does not hurt him or his. He merely gives a casual glance when I cough, strike a match or make any other noise, and watches me cautiously arranging the curtains in order to train the camera on to him, although only standing five feet away from it, and when I am quite ready—he closes his eyes. At 8.40 a.m. some oyster-catchers flew past, calling shrilly; this interested him and woke him up. He then flew off, but, I fancy, only to the top of the island. He seems to be a regular stay-at-home old housekeeper. The sun is out now, and the bluebottles are busy in the dirty eyrie, and are pestering the young. The latter are still sleeping in a heap; they seem chiefly to eat and sleep. One of the larger young, after gaping hard and making a "chipping" noise, has just thrown up a dark pellet or casting of undigested feathers and deposited it on the back of one of the others! At 9.5 a.m. the Tiercel came down to the eyrie without food and tried to tempt the youngsters with feathers and scraps of the last blackbird, and "yacked" when they would not take them readily. He then tried to brood them, but as it was



getting warm only two of them cared for it, the other two moving off and squatting in the eyrie behind him. At 10 a.m. the Tiercel is still hanging about the eyrie, latterly mostly on C. Now he has flown behind the hut on to the edge of the cliff, and there, after a good deal of gaping and straining, has ejected a large casting, which fell down the cliff-side. He remained there alternately preening his feathers and dozing till 10.30, when he flew off, sounding the food, or is it the alarm cry? This quickly ceased, and I do not know where he is now, but fancy he is on the top of the cliff. I do not know where the Falcon is; I have neither seen nor heard her for three and a-half hours. The young are not brooded now in the heat of the day, and are rather bothered by the flies, and occasionally a young falcon will snap viciously at a tormenting blue-bottle. At 11 a.m. I heard the food cry, which at once roused the youngsters and started them looking anxiously round with their large, dark eyes. A few moments later the Tiercel arrived, making this cry, and alighted on B, but without any food. At 11.10 a.m. the food cry is again sounded, more loudly and longer, by one bird, and shortly after in comes the Tiercel with the dried breast-bone of a bird with a little meat on it, which I recognised as the remains of his supper last night. He has hunted it up, and this is his bit of falconry! However, he gave the chicks all he could get off it, and they took it freely. At 11.20 a.m. there is the food cry again, and this time in earnest. It is the Falcon, and the Tiercel answers, and shortly after appears with a bird quite plucked except for the down; it is headless, and I think it is a puffin, but I cannot see its feet. Five minutes later, while he was feeding the young, and just after I had caught sight of the puffin's legs, the Falcon started, and kept up the alarm cry, by which I guessed that the relief-party was at hand. The Tiercel, however, goes on feeding the young, now with redoubled speed, and he himself swallows one of the quarry's legs, which he had pulled off with great force. The Falcon is calling incessantly from above, while the Tiercel tears desperately at the puffin and feeds the young, who are also more hurriedly taking the proffered bits. This is the only effect the continuous warning notes of the Falcon have on the family party. In another five minutes the Tiercel suddenly flies off from the unfinished meal.

He flies more on a level with the eyrie, and gives his warning notes to the young, who immediately hurry to seek cover, and take more notice of their father's warning than they did of their mother's. The warning notes of the Tiercel do not sound to me so quick and sharp as the "Hek, hek, hek" of the Falcon. They appear to be slightly longer, more like "Hurr, hurr." A very few moments after the Tiercel left I was greeted by my friends with "Good morning! How goes it?" So he had stayed feeding in the eyrie until they had almost clambered down to it. My place was taken by Dr. Heatherley, and as soon as I had got my boots on I went across to the eyrie and found the remains of the meal consisted of one leg, part of the back and both wings of the puffin. It is curious how varied the condition of the quarry is when brought. Except for being headless, last night's puffin was almost intact, while this morning's puffin was not only beheaded, but well plucked also. The passerine birds brought were absolutely intact, while what was brought in by the Falcon for the Tiercel's own consumption consisted of fleshy parts of birds, not only plucked but absolutely skinned as well. After being relieved I went to an island about two miles away. Soon after landing there we found a mass of feathers on the shore and the head of a puffin, which was quite fresh, with the eyes clear and full as in life. Beyond a doubt the head and feathers of the puffin I had seen two hours previously brought in by the Falcon and torn up by the Tiercel, an interesting coincidence.

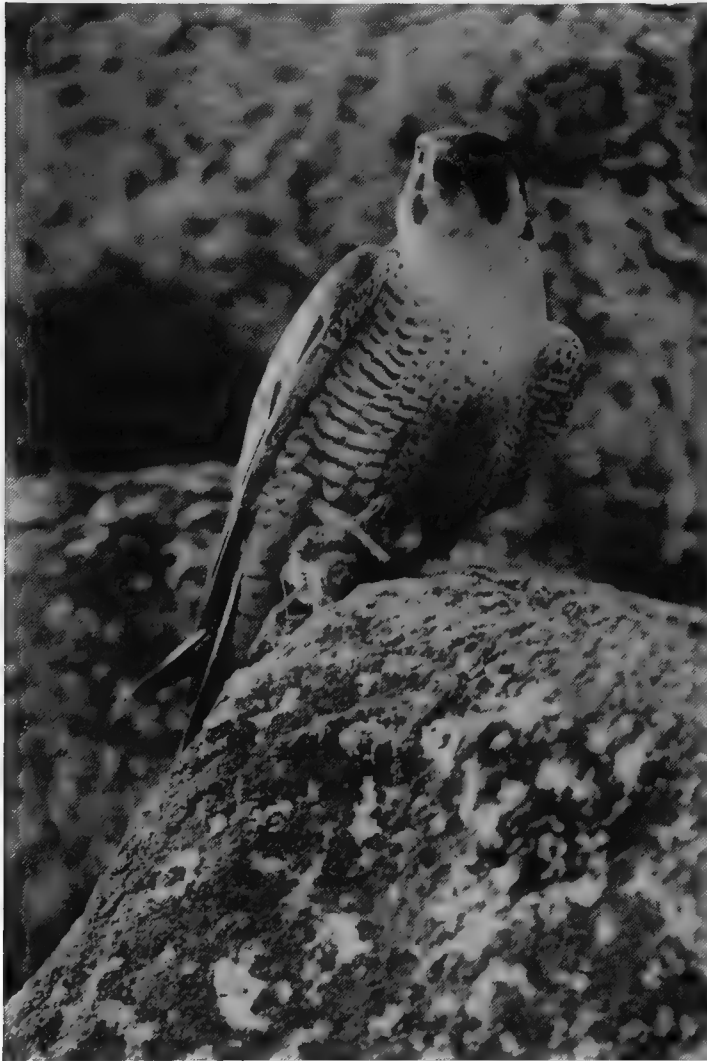
## CHAPTER IV.

## FAMINE IN THE EYRIE.

I AM uncertain whether the famine incident described in the present chapter was due to the Falcon's resentment of the constant presence of spying strangers at the eyrie, and that she voluntarily absented herself for a time in disgust, or that, having been shot, the Tiercel managed to secure the services of another Falcon as a lady-help. The behaviour of the Falcon, as described in Chapter V., is no guide, because, as previously explained, for purposes of continuity, although chronologically correct as regards the age of the young, most of the incidents described really occurred in 1910, when the tent was twenty-five feet away, and the birds were therefore not subjected to quite so much intrusive inspection.

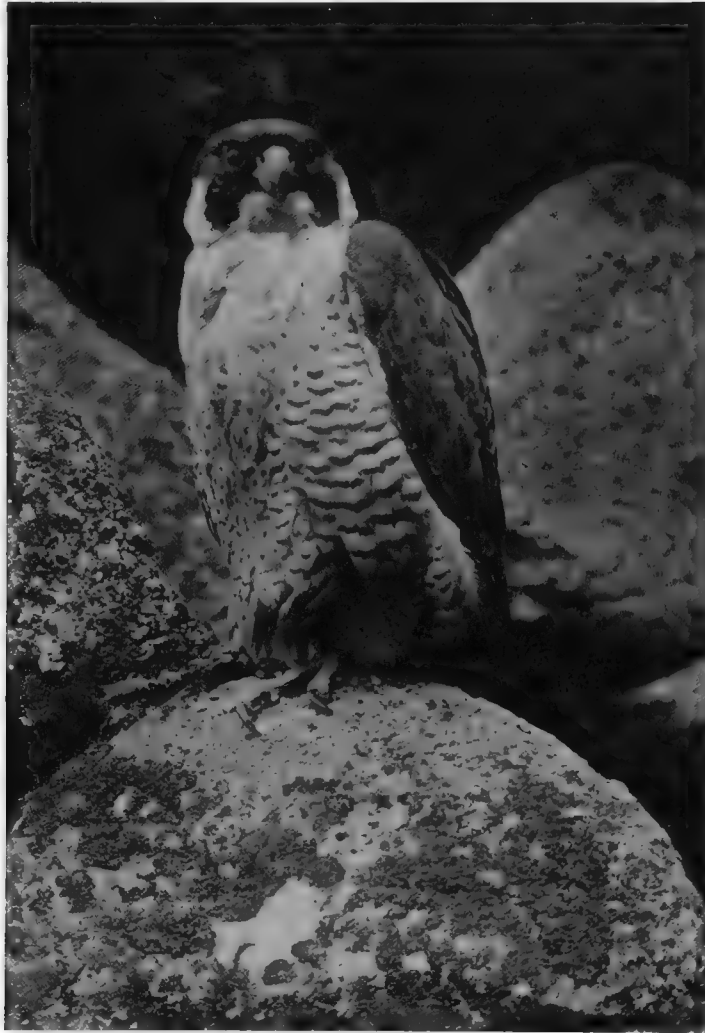
F. Heatherley's watch, from 12.30 p.m., May 24th, to 3.30 p.m., May 25th.—On relieving Booth I found the youngsters with full crops, except the smaller male. As in 1910, one male is distinctly smaller than the other. One female had her crop so distended that she showed purplish skin bare of down, so that it looked like a goitre. The young soon settled off to sleep, flat on their bellies, with both legs stretched out behind them. Only a young male chose the nest depression, the rest lying with their bodies in the sun and their heads in the shade, either of the mallow leaves or rocks. About 1.30 they woke up and a male and female started preening themselves. At 1.40 p.m. they were fed on a passerine bird, brought in his beak by the Tiercel, who alighting on B transferred the bird to his left talons. At 3.45 there was another feed by the Tiercel. The two young females kept in the background during most of this meal, whimpering in a half-hearted way as if they would eat "an they had room." After this meal he jumped on to C and watched the shed narrowly for eight minutes. He stood there with wings slightly open and every feather smooth,

evidently ready for instant flight. As he seemed watching for evidence of life in the shed, I did not venture to train the camera on to him. He has been very nervous all the time, as if Booth had been getting on his nerves. At 4.18 p.m. he brought a partly



THE TIERCEL WITH THRUSH ON B.

*Light 8, Plate speed 250, Subject number 100, Stop F8, Exposure 1-25sec.*



THE TIERCEL RESTING ON C.

*Light 4, Plate speed 250, Subject number 100, Stop F16, Exposure 1-25sec.*

plucked thrush ; all these last three passerines have been partly plucked. After this he twice brooded the young for a short time. After the food cry in the distance he came, at 7.7 p.m., with a thrush. All the young were hungry, and they finished it in eight

minutes. The young huddled together after this as if for warmth. The down is nearly fully developed now, and they keep their eyes open more. The earholes are still prominent, and when moving in the eyrie they hobble about on their tarsi, not on their talons. There has been no brooding worth mentioning to-day, and he cannot cover them when he tries. About 9 p.m., while changing plates, I heard the Tiercel flop down, and when I looked out, at 9.10, he was standing on B, from which he moved into the eyrie later on. The last I saw of him he was standing close to the young, with his feathers ruffled out.

Saturday, May 25th.—When I awoke and looked out at 4.20 he was standing on C. The first feed was at 4.40 a.m., an unplucked thrush; this lasted them ten minutes. Afterwards the Tiercel preened on C for a few minutes, and then, as the young whimpered, he got down and tried to brood them. As he sits he covers about a third of the family circle. One young female whimpered so persistently that at last he got up and brooded her by herself. The second meal, at 5.45 a.m., off a mangled thrush, lasted thirteen minutes. During this meal he pulled off and offered a female all the primaries of one wing, but she dropped them. Then he gave them all a mouthful of breast feathers in turn. About 8 a.m. he was calling for food for quite ten minutes. At 9.20 he alighted on B with a puffin in his beak. He put it under his talons and looked round. Then he picked it up in his beak again and jumped down into the eyrie. About midday one male and female were very lively, raising themselves and bobbing their heads forward, peering and scowling like adults. The sixth feed was a puffin, at 3.20 p.m., in the middle of which the Falcon started the alarm, and the Tiercel immediately began to feed desperately against time, as Booth describes. He shot out of the eyrie only a few seconds before the relief party appeared.

In Atkinson's watch, from May 25th to May 26th, the only fresh incidents recorded were a meal off a pigeon, early in the morning, which lasted twenty-seven minutes, and when the young were gorged, the Tiercel had a good meal himself. After the meal he carried off the remains. After another meal he stood on B for seventy-five minutes, during the whole of which time he had

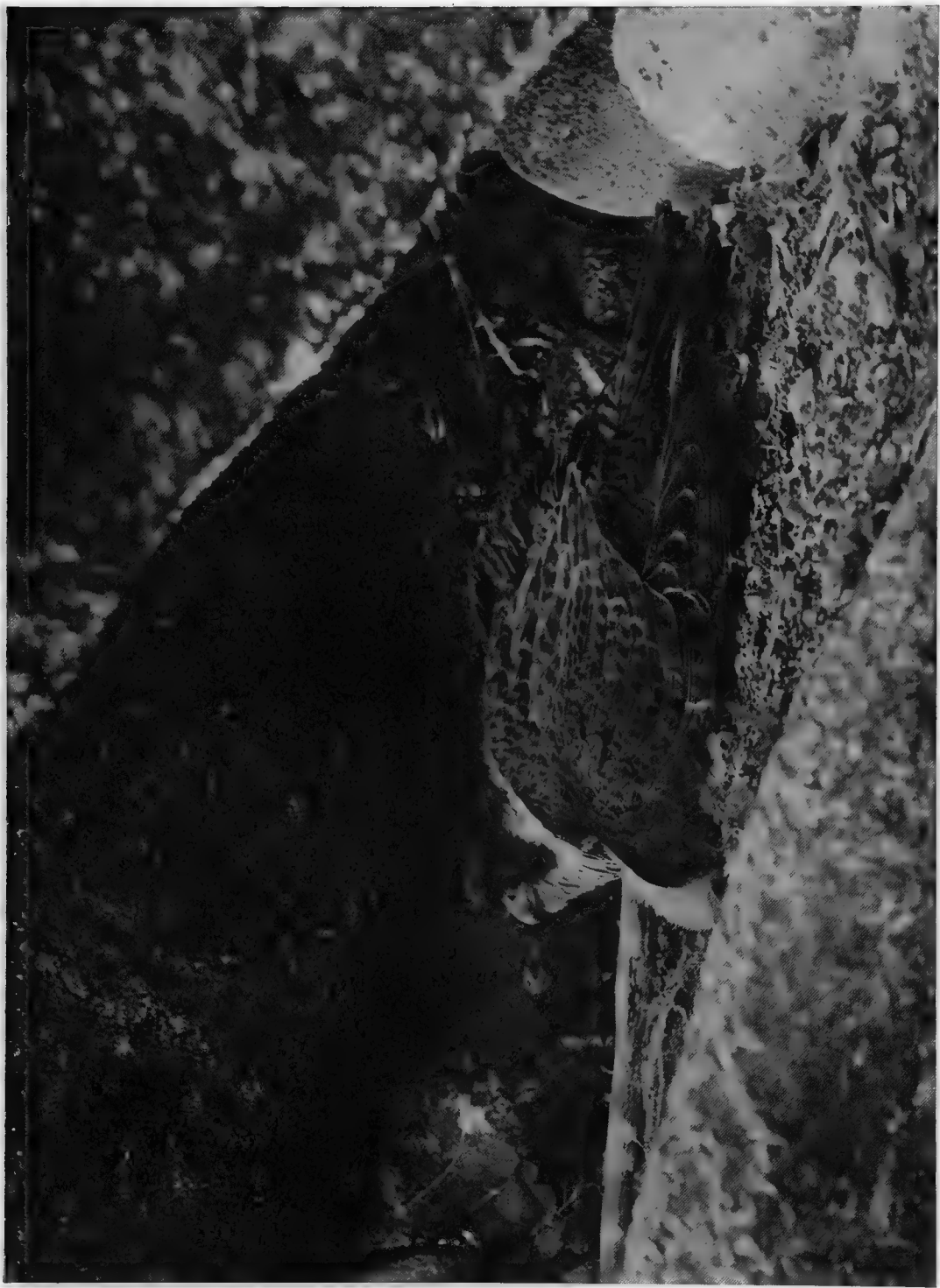


THE TIERCEL ASLEEP.  
*Light 30, Plate speed 250, Subject number 100, Stop F16, Exposure  $\frac{1}{8}$  sec.*



THE TIERCEL BROODING.





THE TIERCEL BROODING

a little white feather sticking over one eye and nearly hiding it. On relieving Atkinson, we found a fresh pigeon's foot in the eyrie, bearing an india-rubber ring with a number on it.

During G. A. Booth's watch, from May 26th to May 27th, he noticed one youngster making a meal by himself off a piece of skin he kept under his talons, and on another occasion a youngster got hold of a mallow leaf and tore it up. He also saw a youngster eject a casting.

Brown and I sailed on May 27th to relieve Booth, and while he was helping Booth to remove his gear I searched the top of the island for castings. While doing this, Jim, our boatman, hailed me to draw my attention to the Falcon flying round, pursued by a greater black-backed gull. She flew quietly round in circles, while the gull barked at her and made vicious stoops, which she easily avoided; but there was a great difference in their speed; the gull was like a yacht easily overtaking a lumbering merchantman. The gull, after each stoop, easily recovered herself, and with a few beats of her great wings caught up with the Falcon and stooped again. The Falcon paid no attention, and after five minutes the gull flew away; but apparently not satisfied, it came back presently and renewed its attack; but the Falcon neither retaliated nor paid any attention except just to shift slightly each time the gull stooped. After the gull had gone I climbed down to the eyrie just as the Tiercel arrived and joined the Falcon in calling the alarm. When I got down to the shed I found Booth very upset. He had heard shots early in the morning, and, having seen nothing of the Falcon, was afraid she had been shot. The young were making such a clamour that they neither of them heard me say that both birds were flying round, and as neither they nor Jim noticed the presence of both birds, they went home with great fears that the Falcon had been destroyed. G. A. Booth had not altogether enjoyed his experience. It seems that when he got into the shed he was so taken up with trying to hear all the instructions given him amid the uproar of the young in the eyrie, that he did not notice how the shed was slung to the rocks above; he only noticed the trestles. Now, his namesake, who weighed about fourteen stone had tried to see all he could while he was

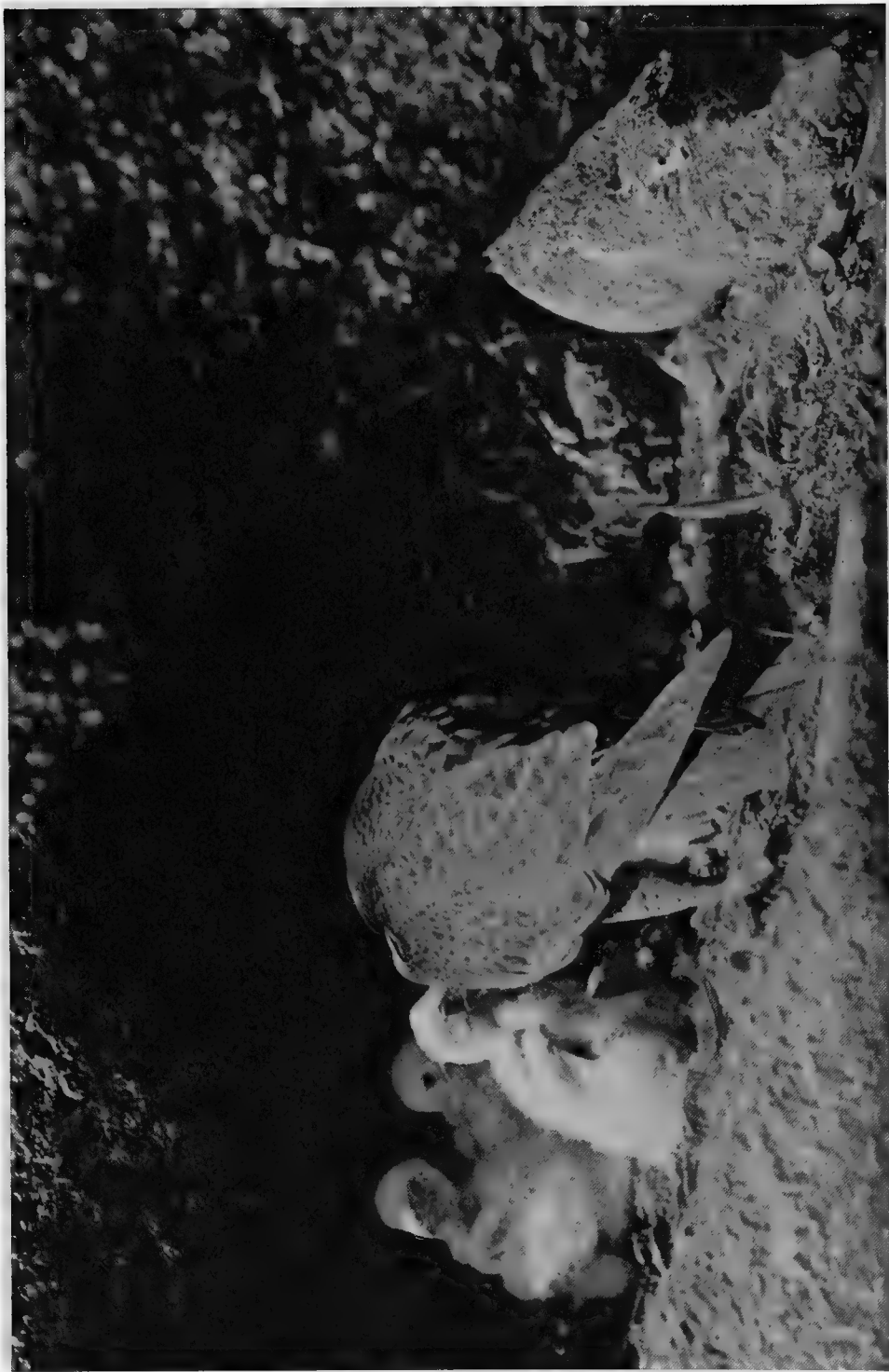


THE FALCON ON GUARD.

*Light 3, Plate speed 250, Subject number 100, Stop F11, Exposure 1-30sec.*

in the shed, and was continually crawling round, using the ventilator-holes and back door to follow the birds when they left the eyrie. He had in this way managed to shift the stones that supported the trestles, so that the shed became unsteady, though safe enough, and so the first time G. A. Booth shifted over to look seawards through the ventilator-holes, he not only saw nothing but sea beneath him, but the shed flopped over with him and gave him a rare start, convincing him that the only safe thing to do was to keep to the landward side of the shed. To make things worse, it blew half a gale during the night, and the rocking of the shed on the unsteady trestles prevented him from getting a wink of sleep. I think he showed great coolness in not getting outside to attend to his safety, although afterwards, when he saw all the arrangements, he laughed heartily at his fears.

F. Heatherley's watch, from 1 p.m. May 27th, to 3.30 p.m., May 28th.—The day being very hot, the youngsters shifted about all the afternoon with the turning sun, to find shade for their heads as they slept. At 4 p.m. the Tiercel pitched on A with a puffin. He screamed the alarm as he flew down, and not a youngster stirred. He stood there silent for five minutes to assure himself that all was well, and then dropped into the eyrie. The young immediately clamoured round him; they seemed very hungry. At 6.10 p.m. the Tiercel pitched silently on B with a gory lump of flesh that might have been half a pound of butcher's meat under his talons, there being nothing else left of the bird. Then he picked it up and, jerking his head forward, peered in all directions with it swinging from his beak, before he dropped into the eyrie. The young are for the first time showing some of the quilled primaries, so they are in the same stage as the young were in 1910, when we first found them. At 8.47 p.m. the Tiercel came silently with what looked like a plucked puffin. The feed lasted twelve minutes; the young were ravenous, and at the finish were quite gory about their beaks. To-day has been very hot, and the heated roof, close to my head, has been very trying. At 9.15 the Tiercel came down on to A and took up his position halfway along it for the night. Twice when I happened to wake in the night and looked out he was standing there in the moonlight.



THE TIERCEL FEEDING YOUNG EIGHT DAYS OLD.  
*Light 8, Plate speed 250, Subject number 100, Stop F11, Exposure 1-100sec.*

Tuesday, May 28th.—I did not wake till 4.30 a.m., and as all was still in the eyrie and the young asleep in a mass, I dropped off again until 7.10, so probably missed two feeds. At 7.20 he brought a small bird, and at 7.40 a thrush, which he held in his talons as he dropped into the eyrie. He fed with his back to me, and looked quite dry, but when he afterwards raised his wings and jumped on to C, facing me, he was quite wet and draggled. He had evidently had a bath, but had kept his wings and tail dry. Unfortunately, he gave himself a vigorous shake just as I took him. At 10 a.m. I heard the Tiercel wailing "Way-ee, way-ee." He came on to B without food, and looked very fine as he stood there peering into the eyrie with his body horizontal, so I took him. At



TEN DAYS OLD AND READY TO FIGHT.



THE YOUNG TEN DAYS OLD.

*Light 5, Plate Speed 250, Subject number 100, Stop F8, Exposure 1-50sec.*

10.50 he paid another visit to the eyrie, and stood again in exactly the same attitude. Afterwards on developing the negatives I found that in the first his beak is all covered with down, which has nearly gone in the second. Now, in that of him shaking himself after the last meal the beak is quite clean, so that in the interval he must have had a meal by himself. At each of these visits he dropped into the eyrie and searched for dried scraps for the young, who were getting hungry. After he had gone one female routed out a pigeon's leg, and pecked a long time at the pink claws as if attracted by the colour. Then her sister dispossessed her of it, and tried to swallow it in a hurry. She got it all down, claws first, but it would not stay down, so then she tried to peck it to bits, but happening to take her foot off it a young male, who had been

watching his chance, got hold of it and sat down at once with it under his talons, holding it firmly while he tore at it. His sister also tore at it, and once or twice tried to pull it away from him and failed. Later on he stood up and in a careless moment she got it from him. Having lost the leg he picked up a dried piece of mallow stem and just swallowed it in time to prevent the first sister from taking it, so she watched her sister, and finally got the leg from her and shuffled off behind a rock with it. There was no fighting or screaming in all this; they just grabbed it in an absent-minded way and lost it with as little care. I noticed to-day that one young female stood upon her talons and tried to walk, but fell over. The Tiercel repeatedly called for food between 10.45 and 11.45. The young settled down to sleep, but roused up and whimpered whenever they heard his cries. Something has evidently gone wrong with the feeding, and although I saw both birds after G. A. Booth heard the shots, some other shot elsewhere may have been successful. 12.57 p.m.: The young are echoing the Tiercel's cries for food. When whimpering softly their cry is easily distinguished, but when loud is exactly like the adult's. At 1.40 p.m. the young will have been without food for exactly six hours. At 1.15 the Tiercel had been calling continuously for fifteen minutes, sometimes ten calls in a series, and always echoed by the young. If the Falcon is dead it will be interesting to see if the Tiercel does any hunting. At 1.20 I can hear a rock pipit flying about in alarm. I cannot hear the Tiercel's wings, but he may be hunting as he has stopped calling. At 1.30 p.m. he arrived with a whole unplucked puffin. They were simply ravenous, and pressed on him so that he was driven with his back to the wall. Becoming cramped for room he dragged the puffin through the crowd into the right corner of the eyrie. At the beginning of this meal, which lasted twenty-six minutes, he ate several mouthfuls himself, disregarding their convulsive grabs and cries. Once he picked the bird up in his beak as if to leave, but it was only to get more room in the middle of the eyrie. Presently a young female retired *hors de combat* to the mallow leaves, but still whimpering. She, however, came back to the scramble in a few minutes, and her place by the mallow leaves was taken by a young male, but as his crop seemed by no means full I was not





STARING HELPLESSLY AT HIS STARVING YOUNG.  
*Light 8, Plate speed 250, Subject number 100, Stop F11, Exposure 1-40sec.*

surprised by his almost immediate return to the family circle. The Tiercel seemed to waste nothing, and gave abundant mouthfuls of feathers all round. One negative was taken specially to show this. It also shows what I did not notice at the time, the third eyelid giving his eye a filmy appearance. At one time he stopped feeding them, and stepping aside, stood panting with his exertions. I took this also. After the Tiercel had left, the young male who had received least food, began to peck at the puffin's foot as if the colour attracted him, and he lifted the remains up, but, of course, as soon as he opened his mouth to swallow the foot dropped. At 2.25 the Tiercel was crying for food, seconded by the hungry young male. At 2.50 the young male was again attracted by the puffin's orange foot, and tried several times to swallow it. Once he drew himself up to his full height, and I could see that the remains consisted simply of the backbone holding the head, wings and legs together, even the ribs had gone. I was relieved at 3.30 p.m.

Riley Fortune's watch, from May 28th to May 29th, records grim famine. He saw no food brought during the whole of that time. The Tiercel paid frequent visits, and tried to find scraps in the eyrie with which to feed the young, and during his absence the young hunted hungrily in the eyrie themselves.

During King's watch, from May 29th to May 30th, he records that the young remained asleep until 2.57 p.m., when the Tiercel brought a domestic chicken, the meal lasting fifteen minutes. He came again at 3.57, and fed them on the remains. After this he came several times without food, and the young were very hungry. Thursday, May 30th, the Tiercel came four times without food before 5.54 a.m., when he brought a thrush. He did not apparently catch this himself, as he was calling for food shortly before he brought it. At 6.35 the Falcon brought a bird while the Tiercel was in the eyrie. King was so pleased to see the Falcon that he did not notice what the quarry was. She alighted on B, and transferring the bird to him remained there and watched him feed them. The Tiercel left at 6.45, but returned at 7.5, and resumed feeding. At 7.10 the Falcon brought a thrush into the eyrie, and transferred it to the Tiercel; she only stayed about a minute. At 7.20 both alighted on the seaward end of A. The Falcon had a thrush in her



TIERCEL FEEDING WITH FEATHERS; THIRD EYELID PASSING OVER TIERCEL'S EYE; YOUNG TWELVE DAYS OLD.

*Light 3, Plate speed 250, Subject number 100, Diaphragm F8, Exposure 1-100sec.*

beak, which she seemed unwilling to give up. Both had hold of the thrush with their beaks and tussled for possession with their wings raised and flapping. King was not able to take this scene as neither camera was trained on the spot, but he says it was a most interesting sight as they stood there against the sky with their wings raised and their feet almost touching as they pulled at the thrush.

This long disappearance of the Falcon gave rise to a good deal of discussion. We could not, of course, tell whether the Falcon that turned up after the interval was the original or another pressed into the service. I am rather inclined to the view that it was a fresh bird, owing to the bold way in which she came into the eyrie, and that the tussle for the thrush showed she required breaking in to her new duties. When Fortune came home and described the young as starving, it was resolved to give them some scraps to go on with until such time as the Tiercel, driven by hunger, hunted for himself, and then probably resume feeding the young. So I took up a freshly-killed puffin and a nestling shag; but when King said that feeding had been resumed, rather than throw them away I placed them conspicuously on the topmost rock of the island.

C. R. Brown next occupied the shed for three hours, during which he recorded three meals off small birds. I relieved him at 4.30 p.m.

F. Heatherley's watch, from May 30th to May 31st.—I took Brown's place at 5 p.m., the puffin and shag being still on the top rock. At 6.45 the Tiercel pitched on A. He stood there calling, and then flopped down into the eyrie with a thrush, but soon left, seeming uneasy, and flying straight out to sea. At 7.10 he came flapping right across the eyrie into the gully leading from the top of the island. After a silence of some minutes he returned the same way and dropped into the eyrie with an intact puffin. I believe that this was the puffin I left on the top rock, as it was gone when I looked, after being relieved, although the shag was as I had placed it. The meal lasted twenty minutes, and at its close he again flew straight out to sea. Looking out for an explanation of his scare, I found that an empty tea-bottle had been left propped against C. I rigged up an extempore pole and noose and was slowly



THE TIERCEL FEEDING YOUNG TWELVE DAYS OLD.  
*Light 8. Plate speed 250, Subject number 100, Stop F8, Exposure 1-100sec.*

pulling it in, when the Tiercel started the alarm, so I swung the bottle under the shed. The alarm died down in two minutes, and shortly after he returned and resumed feeding them off the puffin. There was a good deal of yapping, and he ate most of it himself. When I last looked out, at 9.20 p.m., the young were asleep, but the Tiercel was absent.

Friday, May 31st.—Looking out soon after 3 a.m. I saw an old bird standing motionless in the eyrie close to B. At 3.45, on looking out again, I saw it was the Falcon. She had her eyes closed and she had a patch of white on her head which I had not seen before. This, however, is of no use for identification, as these splashes are generally due to excrement from the young. By 4.30, when the Tiercel arrived with a thrush, the Falcon had disappeared. At 6.10 he brought a small bird. It was a very cold morning, and at 7 a.m. it began to rain. At 7.30 it was pouring, and the Tiercel came down, looking anxious. He stood by the young some minutes and then spread himself over them with extended wings and brooded them until the downpour abated, after about half-an-hour. After one or two visits of inspection, he came at 9.20 a.m. and fed them with a thrush. Each youngster was given a couple of mouthfuls of feathers as a start. Their cheeks are beginning to blacken, and a couple of vertical bands of feathers are showing down their backs. Nothing further happened before G. A. Booth came. During his watch from May 31st to June 1st the principal events noted were the appearance of two new birds in the *menu*, in the shape of a lark and hedge-sparrow, and that at one of the meals a young female, after standing up on her talons and flapping her wings, got hold of a large lump of flesh and took it into a corner and tore it up as she stood with it under her talons, and then walked across the eyrie, having been on her talons for five and a-half minutes. My next watch, from June 1st to June 2nd, proved unprofitable, owing to bad weather. I note that the youngsters are beginning to stand more on their talons. June 4th was a very hot day, and in landing I put the half-gallon jar of water down carelessly, and it separated into two. So, after shutting me up, Jim kindly went for more water. Soon after 7 p.m. the eyrie



THE TIERCEL SHELTERING YOUNG FOURTEEN DAYS OLD FROM RAIN.

woke to life and the young began to move about. First one and then another lurches unsteadily across the eyrie. But for their heads, they look, with their yellow claws, like hunchbacked, speckled farmyard fowls. Only their thighs are downy now, and with their great, dark, solemn eyes and formidable beaks each looks like a caricature of Mr. Gladstone in short cotton drawers. Their home a slaughter-house, where every meal entails a bird tragedy, there is a grim humour in their appearance. They are evidently getting hungry, for presently a big female routs out a bloody skull from somewhere behind the rocks and, holding it under her talons, tears at it for some time and then tries to swallow it. Failing in this, she puts it down and tries to reduce its size. One of the others



THE LORDS OF APPEAL EIGHTEEN DAYS OLD.

*Light 8, Plate speed 250, Subject number 100, Stop F8, Exposure 1-25sec.*





YAPPING TO MAKE THEM HURRY. YOUNG FOURTEEN DAYS OLD.

coming to her and showing too much interest, she lowered both wings to the ground so as to keep her meal quite private. She persevered for a long time ; but, turning away for a moment, I miss the end, as when I look again she is gone. I have just been thinking that I have never seen these birds drink any water ; considering the position of the eyrie, it is as well that they require none. Then ensues a long wait ; the eyrie is deserted even by the flies ; twilight comes and the rocks gradually lose their shadows and solid appearance, becoming a ghostly grey, and the whole scene looks unreal. Just as I am despairing, about 9 p.m., of anything further taking place, I hear a great flapping of wings and, looking out, find all the young in the eyrie gazing eagerly seawards, whimpering and flapping their wings. Then suddenly the whimpering grows louder, the wing-flapping more frantic, and for a moment I catch sight of the Falcon standing on B, holding a gory something in her beak, with two little red legs dangling from it—the headless trunk of a puffin. The next moment she is lost among the flapping wings, wings mottled, as it were, with blobs of cotton-wool. As the flapping subsides, I catch sight of her again in the gloaming. She stands facing me with her young around her, and they are all bowing their heads up and down with a subdued chorus of whimpers. As she stands there, taller and darker than her young, with her black cap, she looks like a cowled monk engaged with his acolytes in some mysterious rite. Eagerly pressing on her, they gradually drive her backwards until all are lost to sight under the rocks ; but still the whimpering continues. In a few minutes the young crowd into view again, and I perceive the Falcon on C. She has her back to the eyrie, is staring haughtily towards me and pays no attention to the suppliant crowd behind her. Then she is gone, the whimpering dies out, the young go one by one, the gloom deepens into night and I settle down to sleep with the thunder of the breakers as a lullaby, interspersed with the reedy grunting of the shag coming home late to her nest below me. When I awake in the chill dawn to the thunder of the surf, I find the eyrie grey and silent and turn to the comfort of hot tea from a Thermos, from which I am disturbed, at 3.45 a.m., by loud whimpering, and am just in time to see the Falcon, with some effort, dragging a razorbill



A YOUNG MALE IN FOURTH WEEK.

*Light 3, Plate speed 250, Subject number 100, Stop F11, Exposure 1-100sec.*

up into the eyrie. As the bird is just about her own size, it shows how powerful she is. This time all disappear under the rocks and I see nothing of the feeding. After about ten minutes she appears again, looks sternly in my direction, raises her wings, jumps on to C and, as she stands there for some minutes haughtily ignoring her clamouring young, a gory white feather sticking to her beak quivers disregarded in the cold morning breeze. The wings of the razor-bill have been lying in the eyrie all the morning, and I had intended to identify them at the end of my watch ; but at 11 a.m., after the sixth meal, the Tiercel picked them up in his beak, then bent down and transferred them to his talons and, stumbling to the edge of the eyrie, dropped into the air and flew away. At 7.30 p.m. I heard the Tiercel calling, and the young became very excited. This went on without his putting in an appearance. After a time, feathers falling through the air led me to look up, and I found the Tiercel with a puffin under his talons, standing on the top of the rock behind the eyrie. After feeding the young with it he returned to the same spot and stood there for some time with his back turned to me ; but his head was never still for many seconds.

## CHAPTER V.

## LAST DAYS IN THE EYRIE.

**B**EFORE describing the last few watches, I might mention that, although I describe the birds as toothless, there is a little triangular nick on each side of the beak into which a toothlike projection in the lower jaw fits, a convenient arrangement with a large mouthful. The castings so frequently mentioned were hard, grey slug-shaped bodies, entirely composed of compressed feathers. One of average size, which looked like half a squashed fat cigarette, when teased out in a half-pint bottle of water, formed a dense cloud of down and feathers. Mr. George Mitchell of Bingley, an ardent follower of the ancient sport of kings, tells me that falconers examine the castings carefully; a moist and loose casting denotes ill-health of the falcon.

During my next watch, on June 6th, I noted that the young did a great deal of preening. Their heads are quite dark now, with just a speck of down here and there, the breasts are beginning to feather, and on their backs are two narrow feathered bands, making a pattern like an inverted figure 8. The base of the tail is still downy. One of the young females, after she had preened, went to sleep at the front of the eyrie, and with her head tucked over her left shoulder looked as if decapitated. The young occasionally stand on one foot, generally the left. In preening they pass each feather through the beak, and the liberated down either floats away or is swallowed. When they shake themselves a lot comes off and floats away. One youngster cocked his head round and watched the down floating upwards. I examined a piece which came into the shed; it had a stem about one-eighth of an inch long, branching into forty streamers. As each finished preening, it backs to the edge of the eyrie and, grasping the rock firmly with its talons, beats its wings vigorously for a minute or two. The young ravens used to do the same thing during their last

week at home. There are other signs of wandering as they emulate one another's efforts in climbing on to the surrounding rocks ; one of the young females has, in fact, disappeared from the eyrie. One young male seems very empty, and is whimpering every few minutes. He has climbed up on to B and is standing beside his big sister. She is warming herself in the rays of the declining sun ; her full crop gives her quite a high-bosomed appearance, and her inclination is evidently towards a quiet dose. But the whimpers disturb her until at last every time he opens his beak she bends over and puts hers into it, as if feeding him, or else closes his beak with her mandibles. Presently he leaves her and gets down into the eyrie to look for something to eat. He attacks the stem of the giant mallow growing in the eyrie, and gets his talons so deeply into it that he has to fall down and flutter about before he can get free. At 7.15 p.m. the Tiercel arrived with a bird and devoted himself entirely to this hungry male at first. While this was going on I happened to knock over a tin in the shed. The Tiercel, at the sudden noise, stopped to listen with his beak open, which led to a misunderstanding. The youngster had been yapped at for not being prompt enough, so now he darted forward and, seizing his father's tongue, tried to pull it out. There now ensued a regular tug-of-war ; the youngster planting his talons well into the ground and leaning back while his father shrieked in agony and, flapping his wings wildly, dragged the youngster hanging on to his tongue, round and round. At last he shook himself free, and I expected to see an instance of personal chastisement, but the meal was resumed as if nothing had happened. The other two youngsters now joined in, the young female's appetite having revived through watching her brother eat. She not having anything offered to her tried twice to bite a piece out of her father's shoulder, as if to draw attention to her wants. The only unusual circumstances that happened next day were that, early in the morning, the Falcon brought a hen blackbird which she just dropped into the eyrie and then flew away. The female appropriated it to herself, but when she got down to the intestines she passed a coil through her beak as if tasting it, and then left the bird as if distasteful. Then a male seized it and, retiring to a corner, worked

hard at it for about five minutes, after which he came to the front of the eyrie and vomited three or four times, each time ejecting a pellet of red flesh the shape of a casting, so that there was evidently something they did not like about that blackbird. Soon after this meal I found the Falcon standing on one of the rocks at the edge of the cliff, all draggled, evidently after a bath. She stood



*Male.*

*Female.*

*Male.*

*Female.*

YOUNG TWENTY-EIGHT DAYS OLD.

*Light 3, Plate speed 229, Subject number 100, Stop F11, Exposure 1-40sec.*

there for three-quarters of an hour performing her toilet and afterwards standing on guard. Later on she flopped on to A and, walking along it, peered down into the eyrie where her young were preening themselves, unconscious of her presence. She had such a marked expression of maternal solicitude that I was tempted to take her, but refrained because her head was in shadow. Then

she turned round and, walking up the rock, stood still just where the rock behind made an ugly line. I was inclined to wait for her to walk a bit further ; but it was well I took her, for an instant later she flashed away.

June 12th.—Rather a rough landing ; the bag containing the spare plates got swamped. On getting to the top of the island I found three of the youngsters there, which did not look hopeful. The young females scuttled off under the rocks, but the male stood his ground and allowed me to put up the camera six feet off and photograph him. Then I turned the camera on to one of his sisters under a shelving rock ; she was quite five feet deep, and testing the light there I gave her ten times the exposure I had given her brother. Then I caught all three, and put them back into the eyrie, where I found the smaller male. I blocked up the exits with rocks, but not very hopefully. The next day proved a very unfortunate birthday for me, as I had nothing to do but listen to the old birds luring the young farther and farther away to be fed, so I was very glad when King relieved me at 1 p.m. He reported three of the young on the top of the island. Again the young male stood his ground while his sisters hid, and having nothing better to do I determined to take him, but owing to the situation he had chosen I found it impossible to erect the camera. King suggested moving him, so putting on my gloves I slowly approached him, and still more slowly brought a hand to each side and then gingerly lifted and carried him to the chosen site. I photographed him there with the remains of a puffin at his feet, but was not very satisfied, as he declined to stand on his talons, but sat on his tarsi with his talons looking paralysed. Then as he behaved so well King suggested bringing the rest alongside of him and making a group. So, very cautiously, I seized the others, the smaller male being found in the eyrie. When they were all gathered together the male I had first posed looked so bad that in desperation I gave him a dig in the stomach, when he immediately rose on his talons to avoid falling over. After I had posed them King pointed out that the dock leaves made a very bad background, but on the principle of half a loaf I thought it best not to risk scaring them either by pulling the docks up or transporting the birds once more. There is no





YOUNG TWENTY-NINE DAYS OLD.

doubt about the Peregrine being a noble ; these young Peregrines seemed prepared to meet unflinchingly whatever fate might have in store for them, and although their parents were both wheeling overhead, screaming blue murder, they themselves seemed to consider it bad form to show any sign of fear. Although for all they knew it meant instant execution, they were undismayed, and



YOUNG TWENTY-NINE DAYS OLD.

it was not impassiveness, as if one of us clicked his fingers all eyes were quickly turned to him, and as soon as the party broke up the females again scuttled under the rocks. But as I looked at my young nobles I wished all the egg collectors in the three Kingdoms could be present to see the true destiny of the Peregrine eggs they prize so much.

## CHAPTER VI.

## GENERAL REMARKS ON THE PEREGRINE.

THE most striking and entirely unexpected fact noticed was that after the first few days the Falcon turned over to the Tiercel the duties usually assigned to her sex—spending her time abroad hunting and bringing the quarry to the Tiercel, who remained at home to feed and look after the young. This hitherto unrecorded trait in their domestic life should, as I said before, commend the bird to Suffragettes in search of a totem. Moreover, the Falcon, whether actuated by hatred of man or not, showed me her version of the hunger strike, a fearsome thing as watched by mere man with one eye on his own future, for in the avian version it is the husband and helpless young that do the starving. What makes me believe that what I saw is the natural habit of the Peregrine is that in this crisis the Tiercel, though evidently anxious to feed the young, never attempted to do any hunting himself, although there were plenty of birds about. It would have been interesting to have seen whether in the end hunger would have driven him to hunt, and having appeased it he would then have fed the young. But the spell of instinct remained unbroken, for at the last the Falcon arrived with a bird. That the Peregrine does not always kill in mid-air is shown by rats, barnyard chicken and nestling shags appearing on the bill of fare. That the Tiercel did leave the island at times was shown by the fact that, like the Falcon, he at some time of each day betrayed by his bedraggled plumage that he had been having a bath.

Having no exaggerated veneration for the printed word which I too often find is copied from one text-book to another in default of original observations, I always try, like a model jury, to purge my mind of preconceived ideas, and in the case of the Peregrines my only working hypothesis was that the Falcon is bigger than the

Tiercel; if that is wrong, then all my observations of the inverted *role* of the sexes in their care of the young goes by the board. Owing to constant association I soon found myself able to tell which bird was present, though, as in the shepherd's ability to distinguish different members of his flock, it would not be easy to at once reduce the process to writing. The Tiercel of this pair had a much larger cere than the Falcon, *i.e.*, the yellow bare skin round the eye showing, as I have learned since, that he was the older of the pair. The cere, owing to foreshortening, disappears when the bird is seen full-face, and in the same way the pose and condition of the plumage, as well as changing expression, help to make identification difficult, but there is also a massiveness about the Falcon which helps to distinguish her from the Tiercel.

As regards the prey, there seemed no selection as to kind; it looked as if with the Falcon the only rule were first come, first served. In the same way I failed to trace any design in the condition of the quarry as delivered. As far as I could make out, if she kept the Tiercel waiting, and presumably turned up with a freshly killed bird, it was intact, whereas the longer she had it in her keeping, the more thoroughly was it plucked and skinned; but this is purely surmise, as from my circumscribed outlook I got no proof of the Falcon waiting to be called. The natural way of feeding the young is for the adult to divide the prey among the young. If it were usual for the prey to be simply dropped into the eyrie, as happened when on occasions the Falcon brought a bird during the Tiercel's absence, I think the young males would have stood a very poor chance beside their voracious sisters—that is, presuming I am right in concluding that the larger young are females. My friend, the late Colonel Moore, when I pointed out the difference in size among the 1910 brood, said that in the *Raptores* generally incubation starts with the first egg laid, and that the young vary in size accordingly. From what I had seen of two young ravens in the previous year, I dissented. I do not know what the books say about it, but I have since satisfied myself that as regards *Peregrines* this is a sexual difference, although I have not gone to the length of dissecting them. As I said at the beginning of the book, from the early appearance of this difference in size I

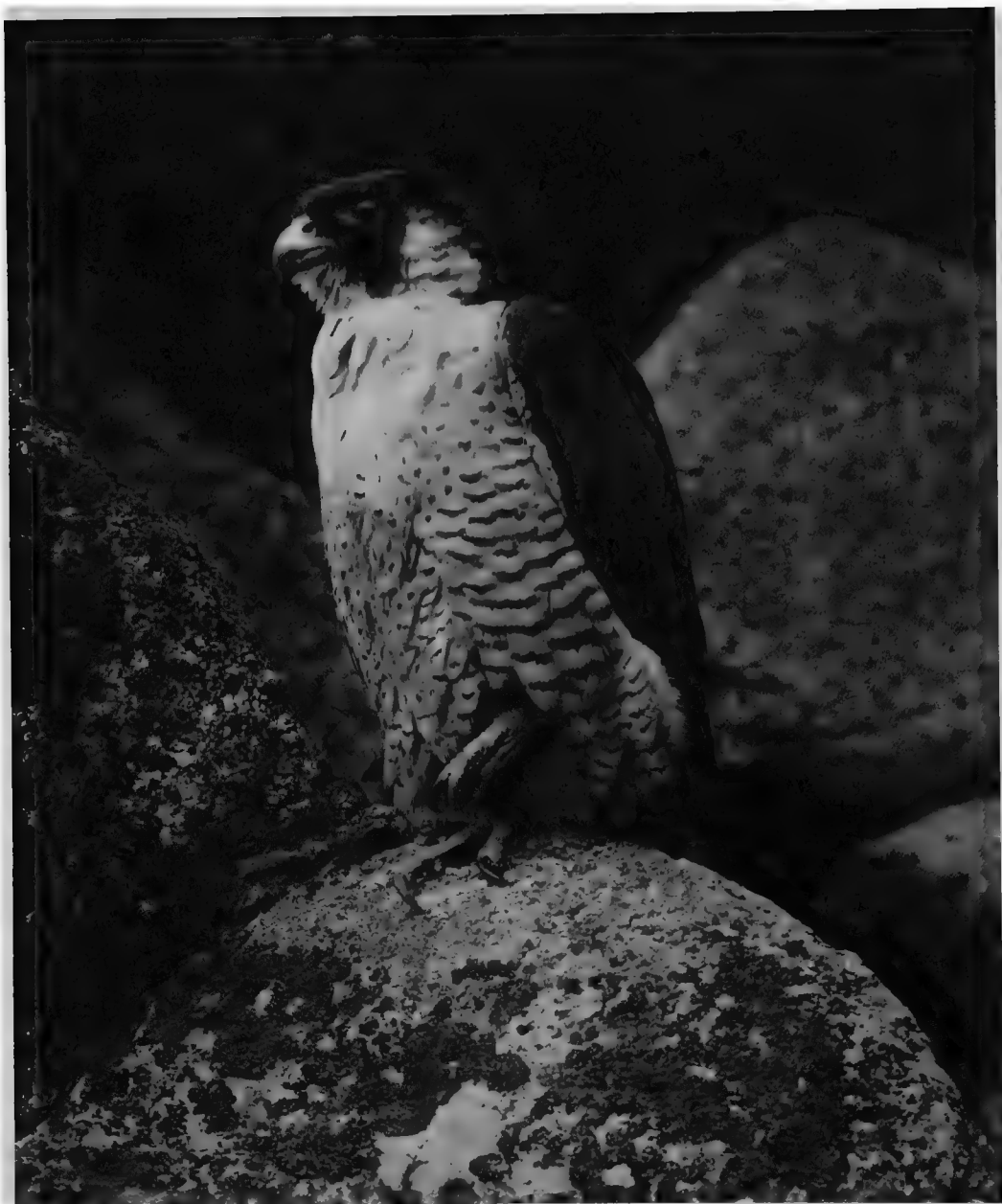
thought it quite possible that it might be discovered in the egg. Confirmation of this view reaches me while revising these sheets, in a letter from King, who says he visited the eyrie on April 9th, 1913, and found three eggs, one of which was larger than the others and weighed fifty-eight grains more, the difference between the two small eggs being not more than a grain.\* Notwithstanding their liveliness in getting to the front when feeding was going on, and the fact that the Tiercel always seemed to take care that the males got enough, yet one always seemed to fare the worst, so that at the end of their stay in the eyrie, though there was no perceptible difference between the two females, one of the males might always be singled out as the Benjamin of the family.

In 1911, owing to there only being two, the increased allowance of food led, as in the case of ravens, to their more rapid development. It was on an occasion when the Falcon dropped a hen blackbird into the eyrie, and after watching for a minute or two flew away, that I got the only evidence I have seen of the sense of taste. The young female, after eating steadily for some minutes, at last got to the intestines. Then I saw her pass a loop through her beak, snapping her mandibles as if tasting it and then, dropping it, she shook her head and retired behind a rock. There must have been something wrong about this blackbird, for the young male, who immediately dragged it into a corner, after eating for ten minutes, came to the front and was violently sick three or four times, bringing up a little red casting each time. I got no evidence of the sense of smell, and although Dr. Penrose has lately given an example of its use in the stone curlew, I have never been able to satisfy myself of birds becoming aware of my presence by its means. The most striking example was when, in a hiding tent by a marshy mud flat, with the wind behind me, black-headed gulls, a peewit and a curlew walked past without becoming aware of my presence. Quite different was the behaviour of two sheep that strayed that way; each, as it got my scent, sniffed, threw up its head and hurried away. I have blown tobacco smoke at a golden

* No. I.	Size	51m.m.	×	41m.m.	Weight	784	grains.
No. II.	..	52	..	×	42	..	785 ..
No. III.	..	53	..	×	42	..	843 ..

plover sitting seven feet away without disturbing him, and at the Tiercel five feet away, and although he looked quizzically at it he never minded the smell, which was convenient in my case. Their sense of hearing is extremely acute, although, as in other birds, constant repetition of a sound which is not followed by anything untoward leads eventually to no attention being shown. This trait, owing to superior boldness, was more marked in the Tiercel than the Falcon, and this sexual characteristic was also evident in the full-fledged young. I have not had any opportunity of watching the young being trained to hunt after they leave the eyrie, but can readily believe that it is more efficient than when undertaken by the falconer. Sight is extremely acute, and on one occasion, when the Tiercel was standing on C, staring full-face at the lens which I was slowly moving, I suddenly realised that I was face to face with stereoscopic vision. I know this is altogether heterodox, and I know that belief is not proof, and although I failed to see how to prove it, I have little doubt that he was fixing both eyes on my proceedings. The third eyelid, which flashes across the eye now and again from the inner corner, is filmy and easily overlooked. It is represented in the human eye by the little fleshy lump in the inner corner. As regards their psychology, I look upon birds in general as absent-minded beggars, with rather more reasoning powers than we, their rich relations, credit them with. By absent-mindedness I, of course, mean their wonderful instincts. Of the Peregrine language I only learned three phrases; but the use of a hiding contrivance greatly enlarges one's appreciation of bird-language, a rich field awaiting investigation by ornithologists.

In raising himself from the wild, man has cut himself off from much knowledge of the ways of his poor relations, knowledge some of which even our immediate ancestors retained; for instance, the use of the great grey shrike as sentinel by the Dutch trappers of passage hawks, a use of a bird's characteristic implying an intimate knowledge few museum authorities would care to claim. Modern bird-photography and Nature study are, however, again lifting the veil. In all this I wish it to be distinctly understood that I am simply a bird-lover, with some knowledge of photography. What little experience I have had of the official ornithologist



THE TIERCEL OFF DUTY.

*Light 3, Plate speed 250, Subject number 100, Stop F16, Exposure 1-25sec.*

makes me anxious not to be confounded with him, as I think the present mania for egg and bird collecting deplorable, considering the difficulties it places in the way of study when so much remains to be learned of the habits of living birds. Minute description of plumage, leading to the discovery of what is called a subspecies, which leads in turn to the slaughter of hundreds of birds in order that those who wish to be considered ornithologists may see their names in print, is one of the saddest features of modern ornithology, while the wholesale meddling with scientific nomenclature has rendered it almost useless as a means of communication with foreigners. Rare birds have no greater enemy than the scientific collector. I was only lately reading an account by an ornithologist of his hunts after Sea Eagles' eggs in Scotland, and it left me wondering whether future generations will consider his complete works any compensation for the extinction of the bird. That grand bird, the Gyr Falcon of Iceland, is now on the very verge of extinction owing to the way it is being harried by ornithologists and collectors employed by wealthy *dilettanti*. Reasoned remonstrances are of no avail against this senseless destruction of rare birds, and more and more will become extinct unless the formation of private collections is made illegal. The multiplication of museums is also of doubtful benefit. No town is complete nowadays without a museum, and its curator, of course, desires all the rarest birds to be represented. On my last visit to Chester Museum, one of the best in the kingdom, I found the latest acquisition was an osprey shot in the neighbourhood. Considering that nine-tenths of the visitors do not probably know an osprey from an ostrich, and do not care, I think a museum is the wrong place for a bird which is nearly extinct. Words, however, have as little effect as the sandwich-boards carried about in London imploring women not to wear rare birds' feathers in their hats; but, at any rate, these are some of my reasons why I wish my readers to consider me simply as a bird-lover.



## CHAPTER VII.

## PHOTOGRAPHIC DETAILS.

AS it is my hope that bird-photography may become still more popular than it is now, both because of its ornithological value and because of its excellence as a sport for the man or woman of limited means, I should like to give enough information to enable others to go and do likewise. The patience required has been much exaggerated, as well as the hardships. Patience, commendable patience, wonderful patience and comfortable laziness are closely related, and any discomfort is entirely due to the photographer's want of foresight, and is, I am sure, no necessary part of the sport. The hiding contrivance, whether it be a tent or shed, is the most important part of the apparatus, and no time is wasted in making it as perfect as possible. A good maxim is to try all apparatus well before using it in the field, and it is well to place all orders with the makers during the winter to save vexatious delays. Another is to keep a list of the apparatus to be used and check it every morning before starting out, or to keep everything likely to be wanted in the rucksack, as it is most annoying to find the absence of a small thing, such as a tripod screw, ruining a whole day's work. I use a Lancaster half-plate camera with Mackenzie Wishart envelopes. My favourite lens is one of fifteen-inch focus, because it gives a good-sized image, as I see no sense in going to the trouble of getting the camera within six feet of a shy bird and then being content with an image the size of a postage stamp. Telephoto lenses do not appeal to me. With Kearton, I believe in developing some, at any rate, of one's exposures at the end of the day, and my first day anywhere is spent in fitting up a comfortable dark room. I have never been to a place yet where I could not get a cellar, attic or shed which could not in a few hours be converted to use. As in the majority of cases fast plates have to be used, and as the less light falls on them the

better, it is well to acquire the habit of working in the dark. A little practice soon enables one to change plates by touch and to store exposed plates in light-tight boxes by the same means. The best book for learners, in my opinion, is Watkin's manual. When using panchromatic plates I acquired the habit of time-development, and now seldom see a plate till it comes out of hypo. King, liking the panchromatic results, but not altogether trusting this work in the dark, wrote to Wratten and Wainwright for a safe light, and when the deep green glass came he was disappointed to find that his candle would not shine through it, so I advised him to send it back and say he found a piece of board painted green did equally well. As regards shutters, I believe in testing them with a Wynne's shutter-tester before using them, as the speeds the makers give are quite unreliable. I have three shutters fitted to my camera. A time and instantaneous is fixed on the front and carries a flange on which the lens screws, so that the shutter is behind the lens. The other surface of the front has two little catches for a silent studio shutter, which I can fix on by taking out the back of the camera, the tube passing out by a hole in the front board. The less you bring your hands into sight by having to manipulate the front of the camera the better, and when doing so gloves should be worn and all movements be very slow. Then the most expensive and least useful is the focal plane shutter at the back. In choosing a shutter, the great desideratum is noiselessness. A mackintosh focussing cloth is useful, and other accessories I have acquired by associating with other bird-photographers are a magnifier for use in focussing, and in connection with this I think it pays to grind one's own screens in order to get a fine grain. Then a blackened brass cylindrical hood, to screw on to the lens front and project two or three inches, is useful against sun and rain. The Sinclair tripod screw is another acquisition, and the Rambler tripod as good as any I have tried. I believe in keeping a note-book in which, as far as possible, all details are entered directly after the exposure, the other half being used for notes on the birds, which I enter on the spot with a red dwarf stylo. Wherever available I have placed under prints the full particulars of exposure. For educational purposes I think that mine will be



THE TIERCEL DOZING WITH HIS EYES CLOSED.  
*Light 30. Plate speed 250, Subject number 103. Stop F16. Exposure 1/100.*

more useful than King's, because our methods are, perforce, quite different. He is photographing more or less all the year round, and with constant practice turns out a properly exposed negative without being afterwards able to give you details about light, stop or shutter speed. I, on the other hand, am restricted to about a fortnight each year; therefore I have to pay great attention to detail in order to get good results. He is like the normal individual who can rise from his chair and walk out of the room without thinking of how it is done. I am like the poor man with locomotor ataxia, who has to repeat to himself, "Now I must bring my feet back under the edge of the chair, now I must lean forward and straighten my hips as I straighten my knees." Accordingly I use a Watkin's standard meter, which looks complicated, but is soon learnt, and test the light whenever I can. For birds at close quarters I always use 100 as the subject number. The only thing I have found of any use with under-exposures is to first of all harden the film with formalin and then develop at a temperature of about 90deg. Fahr. Of course, every fresh bird that you try has some characteristic which has to be studied; that is where some of the sport comes in. The stumbling block in the case of adult Peregrines is the extreme rapidity of the sudden turn of the head. Instead of trying to overcome this by brute force, by giving an extremely short exposure, it is better to wait for the turn and expose directly it is over.

Photographs being more useful scientifically if taken to scale, I have a piece of broomstick with sixteen inches prominently marked on it. When placed on rock C and focussed on the screen it was found that a halfpenny (one inch in diameter) covered five inches on the broomstick, so that the bird photographed on C would be a fifth of life-size, and in afterwards making an enlargement, if I enlarge the image on the negative five times I get the bird life-size. On B the halfpenny covered six inches, showing that the bird would then be a sixth life-size on the negative and in the middle of the eyrie a seventh. As nearly all the illustrations are enlarged, I might state that the largest image among my Peregrines is that of the Peregrine stretching himself. This on the negative measures three and a-half inches from the top of his head to the

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*Many plates enter the dish, but few gems emerge. 73*

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lowest visible portion of his left wing. Most mistakes in field-photography are due to getting flurried ; therefore it is well to try and proceed slowly and methodically, even if seconds seem precious. Lastly, a rucksack is the most convenient means for transporting apparatus, and the safest, because a heavy bag swung over one shoulder is likely to suddenly shift when you are in some awkward situation and shake your nerve, if it does nothing worse.



# APPENDIX.

TIME-TABLE OF MEALS IN THE EYRIE FROM MAY 20TH TO JUNE 2ND, 1912.

<i>Date.</i>	<i>Time.</i>	<i>Prey.</i>	<i>Duration of meal.</i>	<i>Observer.</i>
May 20	3.0 p.m.	Mangled passerine bird	15min.	F. Heatherley
May 21	4.55 a.m.	" "	15min.	"
"	5.50 a.m.	Blackbird	15min.	"
"	8.8 a.m.	Mangled passerine bird	12min.	"
"	9.49 a.m.	Puffin	16min.	"
"	5.43 p.m.	Not identified	—	Jasper Atkinson
"	6.10 p.m.	"	—	"
May 22	4.35 a.m.	"	13min.	"
"	7.6 a.m.	"	12min.	"
"	9.10 a.m.	"	15min.	"
"	3.5 p.m.	"	—	C. J. King
"	3.45 p.m.	Puffin	10min.	"
"	4.50 p.m.	Hen blackbird	15min.	"
"	6.15 p.m.	Remains of above	2min.	"
"	7.12 p.m.	(?) Starling	10min.	"
May 23	5.12 a.m.	(?) Thrush	—	"
"	7.15 a.m.	(?) Thrush	—	"
"	9.5 a.m.	Thrush	12min.	"
"	2.22 p.m.	Unidentified	7min.	F. H. Edmondson
"	3.10 p.m.	Puffin	20min.	"
"	5.25 p.m.	Thrush	Fed against time	"
"	7.15 p.m.	Puffin intact	20min.	H. B. Booth
"	8.35 p.m.	Breast of curlew	Only a taste	"
May 24th	4.50 a.m.	Song thrush intact	—	"
"	5.20 a.m.	Rock pipit intact	—	"
"	7.20 a.m.	Female blackbird intact	15min.	"
"	11.10 a.m.	Dried remains of curlew	—	"
"	11.20 a.m.	Mangled puffin	Fed against time	"
"	1.40 p.m.	Mangled passerine bird	—	F. Heatherley
"	3.35 p.m.	Remains of above	—	"
"	3.45 p.m.	Mangled passerine	—	"
"	4.18 p.m.	Mangled thrush	12min.	"
"	7.7 p.m.	(?) Thrush	8min.	"
May 25	4.40 a.m.	Thrush intact	10min.	"
"	5.45 a.m.	"	13min.	"
"	9.20 a.m.	Unidentified	10min.	"
"	12.43 p.m.	"	—	"
"	3.20 p.m.	Puffin	Fed against time	"
"	8.20 p.m.	Mangled passerine	7min.	Jasper Atkinson

<i>Date.</i>	<i>Time.</i>	<i>Prey.</i>	<i>Duration of Meal.</i>	<i>Observer.</i>
May 26	5.45 a.m.	Mangled passerine	6min.	Jasper Atkinson
"	6.50 a.m.	Carrier pigeon	27min.	"
"	9.7 a.m.	Unidentified large bird	17min.	"
"	2.5 p.m.	Headless bird	11min.	G. A. Booth
"	2.33 p.m.	Plucked bird	6min.	"
"	6.55 p.m.	"	7min.	"
"	7.18 p.m.	"	10min.	"
May 27	9.5 a.m.	Blackbird	5min.	"
"	2.5 p.m.	Puffin	—	F. Heatherley
"	4.0 p.m.	Unidentified	—	"
"	6.10 p.m.	Gory lump of meat	7min.	"
"	8.47 p.m.	Puffin	12min.	"
May 28	7.20 a.m.	Small bird	5min.	[I probably slept
"	7.40 a.m.	Thrush	—	through two
"	1.30 p.m.	Puffin intact	26min.	meals]
		[No meals during twenty-four hours' watch]		Riley Fortune
May 29	2.57 p.m.	Domestic chicken	—	C. J. King
May 30	5.45 a.m.	Thrush	—	"
"	6.35 a.m.	Unidentified	10min.	"
"	7.10 a.m.	Thrush	—	"
"	7.20 a.m.	"	6min.	"
"	8.50 a.m.	Small mangled bird	5min.	"
"	9.40 a.m.	"	—	"
"	2.58 p.m.	Thrush	7min.	C. R. Brown
"	3.30 p.m.	"	8min.	"
"	4.20 p.m.	"	7min.	"
"	6.45 p.m.	"	—	F. Heatherley
"	7.20 p.m.	The dead puffin I left on rock	20min.	"
May 31	4.30 a.m.	Thrush	—	"
"	6.10 a.m.	Unidentified	—	"
"	9.20 a.m.	(?) Plucked thrush	10min.	"
"	2.35 p.m.	Blackbird	4min.	"
"	3.36 p.m.	Mangled bird	—	G. A. Booth
"	5.45 p.m.	Hedge-sparrow	3min.	"
"	6.25 p.m.	Skylark	4min.	"
"	7.30 p.m.	Young thrush	3min.	"
June 1	4.40 a.m.	Thrush	—	"
"	6.0 a.m.	Blackbird	4min.	"
"	8.5 a.m.	"	4min.	"
"	10.55 a.m.	Thrush	—	"
"	2.30 p.m.	Mangled passerine	5min.	F. Heatherley
"	3.15 p.m.	" "	—	"
"	5.35 p.m.	Thrush	—	"
"	6.35 p.m.	Puffin	30min.	"
June 2	4.30 a.m.	Unidentified	—	[Owing to gale
"	5.15 a.m.	"	—	with rain I had
"	6.30 a.m.	"	—	to close front
"	9.0 a.m.	"	—	of shed at
				11 a.m., so saw
				no more.]



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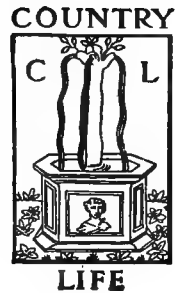


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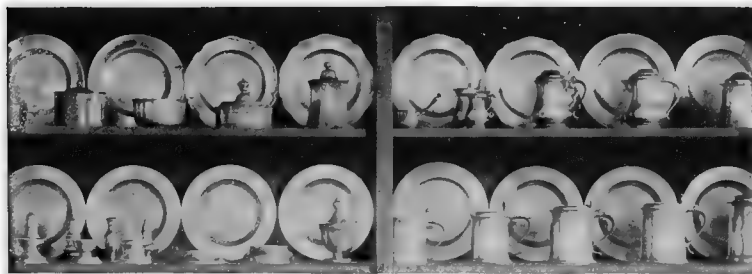
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